Aligning Resources to Meet State Needs: The Educational Needs Index

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Southern Governors' Association

Houston D. Davis, Ph.D., Austin Peay State University

Brian E. Noland, Ph.D., Tennessee Higher Education Commission

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Tennessee Higher Education Commission

Austin Peay State University

National Center for Higher Education Management Systems

The Public Agenda

- Policymakers need to evaluate their state canvas of educational, economic, and demographic conditions.
- States must use this analysis to frame the development of a broad-based plan centered on improving the quality of life for all citizens.
- States should re-examine the missions of their systems of higher education asking …

  How can higher education serve the broad needs of states, rather than how can states serve higher education?

- The creation of the Public Agenda will thereby provide a center of consensus for statewide and regional planning/policy initiatives.

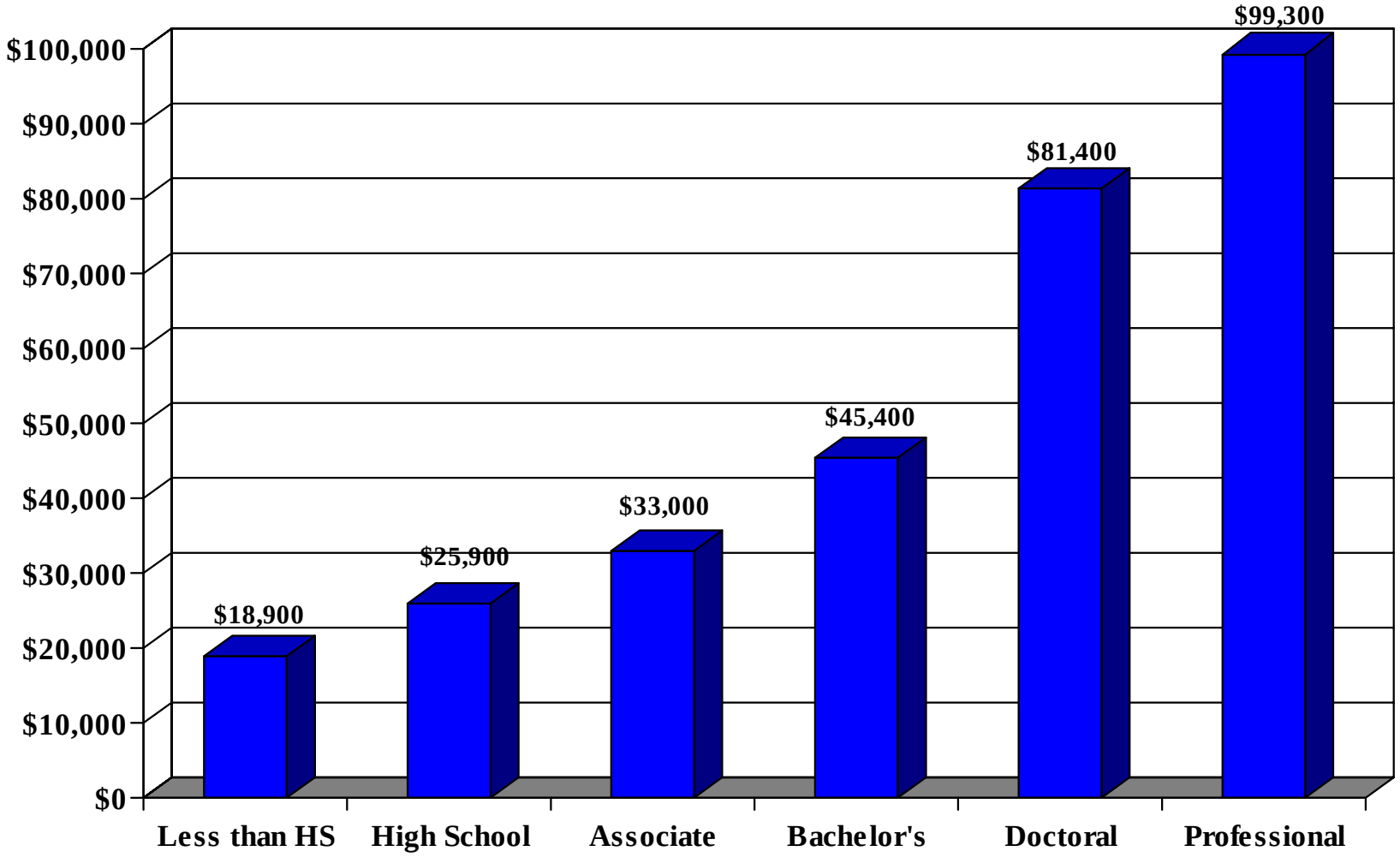
The Knowledge Economy and Higher Education

- In the Knowledge Economy, education, technology, and learning are the keys to sustainable economic growth.
- Higher education provides the foundation for the Knowledge Economy.
- Elected officials must remain diligent in their efforts to make significant investments in their educational infrastructures.
- In order to remain competitive, states must work to develop policies that incorporate human, intellectual, and financial capital.

Human Capital Theory

- Individuals and society derive economic benefits from human capital investments in people.
- Based on the notion that education increases the human capital stock of individuals, improves their productivity, leads to increases in economic productivity, and contributes to the general betterment of society.
- The advancement of educational attainment has become an indispensable variable in policy efforts to make improvements of society as a whole.

Median Income by Level of Educational Attainment



Source: U.S. Census Bureau, Current Population Survey, 1998-2000

Policy Challenges for the Southern Region

- While the region has historically benefited from a favorable business climate, a diligent and inexpensive workforce, and strategic geography, significant weaknesses persist in the ability to meet the needs of the Knowledge Economy.
- The region has almost 400,000 fewer manufacturing jobs now than it did a decade ago. The South has made only incremental progress in improving its workforce.
- A large percentage of the existing workforce is not oriented towards the Knowledge Economy. The region is relatively undereducated and there are severe leakages in the P-16 educational pipeline.

Cracks in the P-16 Education Pipeline

State	For every 100 Ninth Graders	Graduate from High School	Enter College	Still Enrolled Sophomore Year	Graduate within 6 years
Massachusetts	100	75	52	41	28
Iowa	100	83	54	37	28
Pennsylvania	100	75	46	36	27
Virginia	100	74	39	30	20
Delaware	100	61	36	28	19
Missouri	100	73	39	27	18
North Carolina	100	59	38	28	18
Maryland	100	73	40	30	18
California	100	69	33	22	17
West Virginia	100	75	39	27	15
Florida	100	55	32	23	14
South Carolina	100	51	34	23	14
Tennessee	100	55	34	23	14
Alabama	100	59	34	23	13
Kentucky	100	66	39	25	13
Mississippi	100	56	36	23	13
Arkansas	100	74	39	26	12
Louisiana	100	56	33	22	12
Oklahoma	100	73	36	23	12
Georgia	100	52	32	21	12
Texas	100	62	32	19	11
United States	100	67	38	26	18

Educational Attainment - SGA States

Percentage of Population 25 or Older with a Bachelor's Degree (2000 Full Census)			
	1990	2000	% Change
United States	20.3%	24.4%	4.1%
SREB States	18.6%	22.4%	3.8%
Alabama	15.7%	19.0%	3.3%
Arkansas	13.3%	16.7%	3.4%
Delaware	21.4%	25.0%	3.6%
Florida	18.3%	22.3%	4.0%
Georgia	19.6%	24.3%	4.7%
Kentucky	13.6%	17.1%	3.5%
Louisiana	16.1%	18.7%	2.6%
Maryland	26.5%	31.4%	4.9%
Mississippi	14.7%	16.9%	2.2%
Missouri	17.8%	21.6%	3.8%
North Carolina	17.4%	22.5%	5.1%
Oklahoma	17.8%	20.3%	2.5%
South Carolina	16.6%	20.4%	3.8%
Tennessee	16.0%	19.6%	3.6%
Texas	20.3%	23.2%	2.9%
Virginia	24.5%	29.5%	5.0%
West Virginia	12.3%	14.8%	2.5%

TN ranked 10th in the SREB in 2000, an increase of one position over 1990.

To reach the average attainment level of their border states, TN needs to create 181,530 additional college graduates.

SREB Factbook 2002-03

Improving the Policy Toolbox

- The geographic and demographic diversity of the Southern region provides challenges to those planning for the delivery of private or public goods and services.
- As recently noted by the *Southern Growth Policies Board*, states need to build and maintain a more complete demographic profile of their workforce …
  - This profile should take into account the educational, economic, and population growth factors of all counties in the region, thereby providing a clear picture of workforce opportunities and challenges.
- The purpose of this research is to develop an econometric model that answers this call, thereby providing direct evidence of the link between education and social welfare.

Educational Needs Index

Foundational Constructs

- State budgets are increasingly challenged by fluctuating state revenues.
- Education and the economy are increasingly intertwined as human capital becomes a centerpiece of the information economy.
- Educational planning indicators need to be linked with economic and demographic variables to provide a legitimate representation of our citizens.
- The demographic characteristics of the South are not uniform from region to region. The current use of only state-level indicators in the planning process limits the ability of planners to differentiate between the various regions of the SGA states.

Educational Needs Index Factors

Educational Factors (40% of ENI)
Percent of the population 25 and older with a high school degree
Percent of the population 25 and older with a bachelor's degree
Percent of the population 25 to 64 with an associate degree
Economic Factors (25% of ENI)
Average unemployment over a 24 month period of time (Jan. 2000-Dec. 2001)
Percent of population in poverty
Median household income
Per capita income
Growth Factors (20% of ENI)
Projected population growth from 2000 - 2010
Rate of population growth from 1990 - 2000
Ratio of Births to Deaths, 1990 - 1999
Population age 0-19 as percent of the overall population
Market Factors (10% of ENI)
Population age 20-44 as percent of overall population
Minorities as a percent of population (includes African American and Hispanic)
Manufacturing employment as a percent of industry
Population Adjustment Factors (5% of ENI)
Percent of the state's population age 0-19
Percent of the state's population age 20-44

Index Formulas

For Each Category:

Factor Score = (Z1 + Z2 + …. Zn)/n

For County's Overall Index Score:

Educational Needs Index =

(Educ)(0.40) + (Econ)(0.25) + (Growth)(0.20) +
(Market)(0.10) + (Pop. Adj.)(0.05)

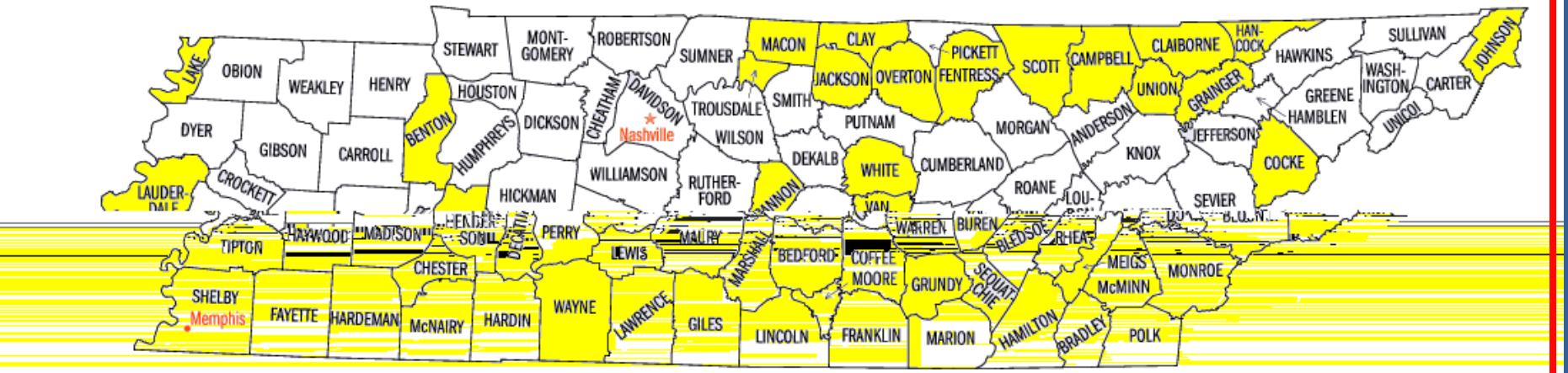
The Educational Needs Index

Analysis by Individual State

Tennessee

Tennessee

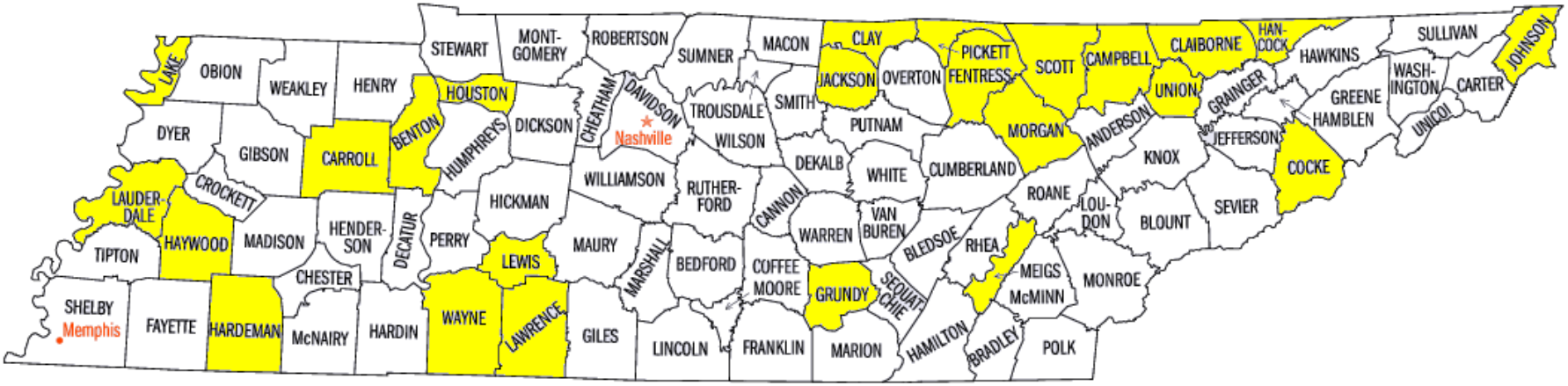
Critical Counties - Educational Factors



Educational Needs Index, SGA Fall 2003

Tennessee

Critical Counties - Economic Factors

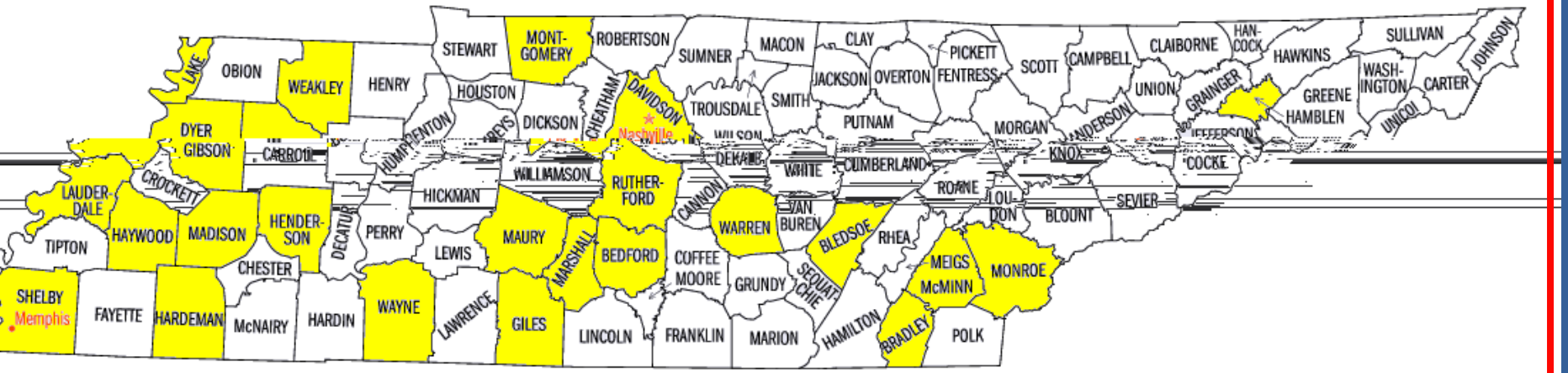


Tennessee

Critical Counties - Growth Factors

Tennessee

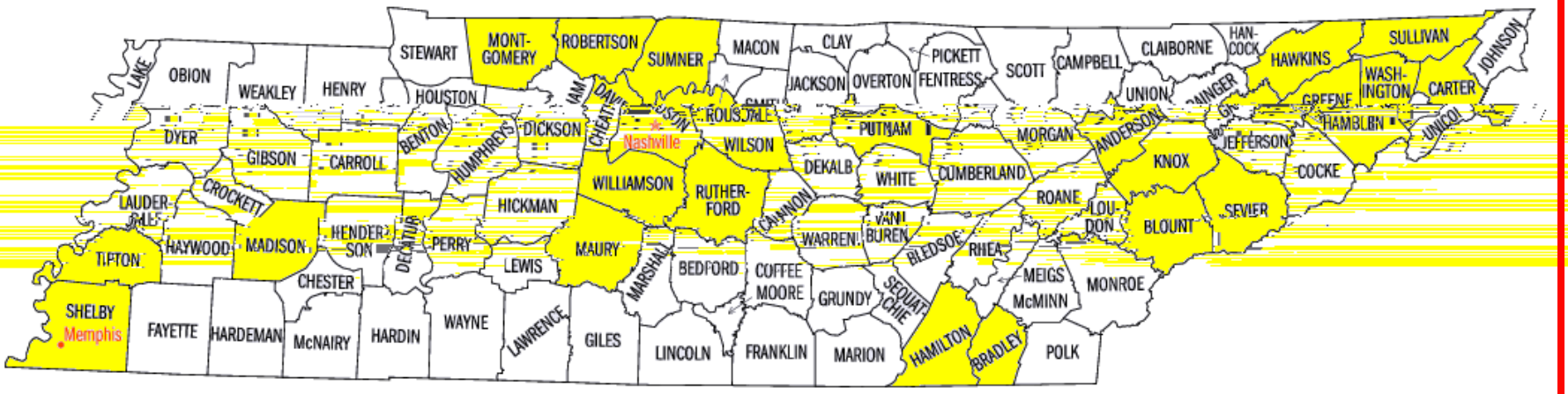
Critical Counties - Market Factors



Educational Needs Index, SGA Fall 2003

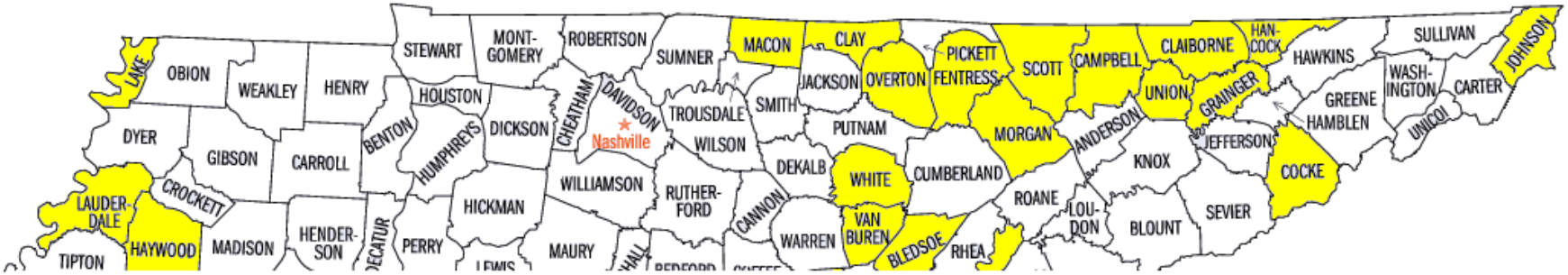
Tennessee

Critical Counties – Population Adjustment



Tennessee

25% of Counties with Most Critical ENI



Educational Needs Index, SGA Fall 2003

Educational Needs Index

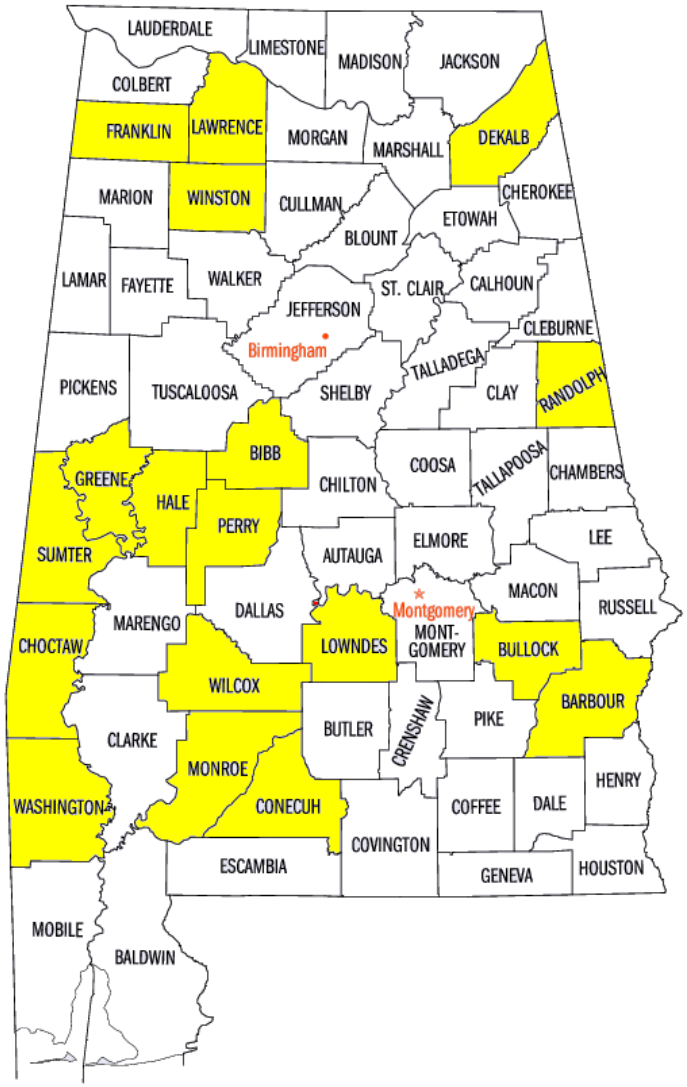
State Specific Analysis by

County/Parish

for the SGA Region

Alabama

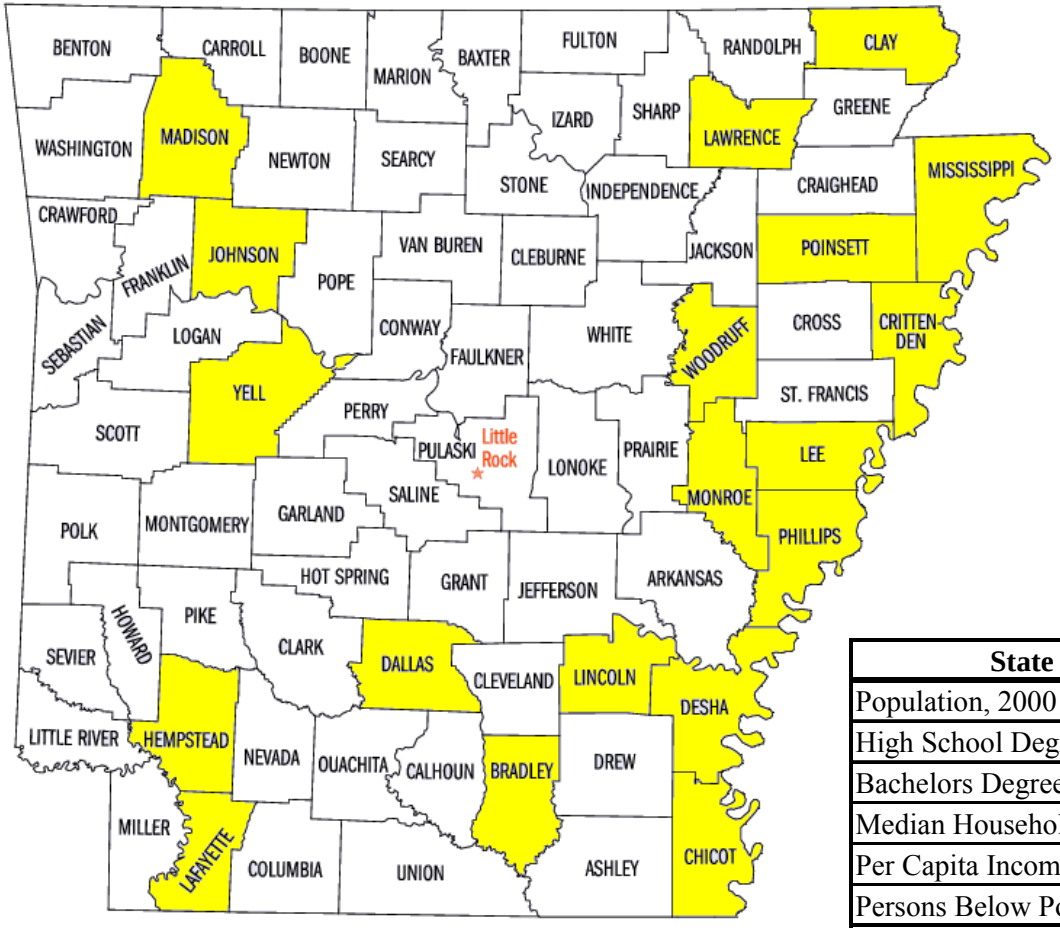
25% of Counties with Most Critical ENI



State Quick Facts	Alabama	USA
Population, 2000	4,447,100	281,421,906
High School Degree Attainment, 2000	75.3%	80.4%
Bachelors Degree Attainment, 2000	19.0%	24.4%
Median Household Income, 1999	$34,135	$41,994
Per Capita Income, 1999	$18,189	$21,587
Persons Below Poverty, 1999	16.1%	12.4%

Arkansas

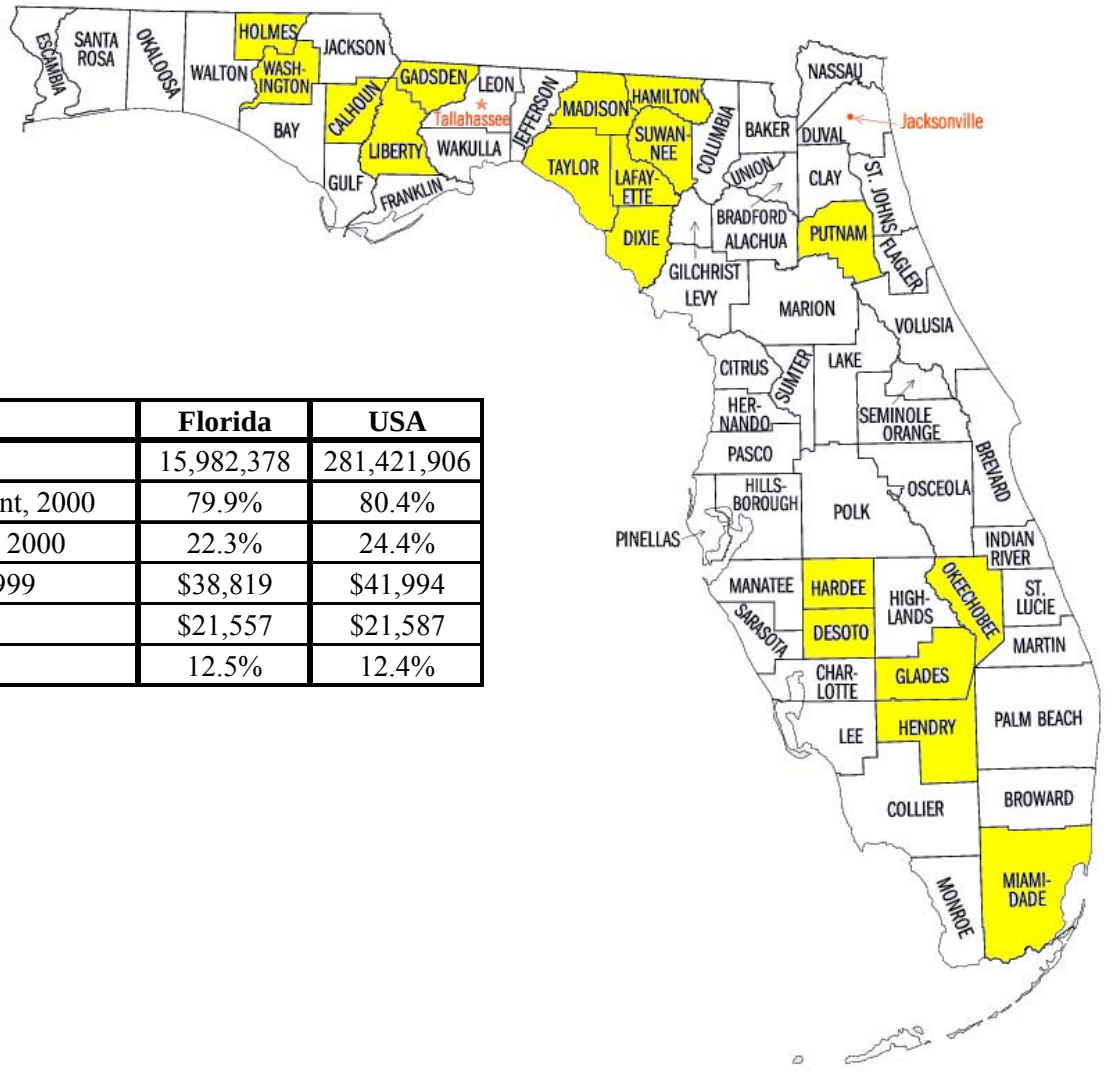
25% of Counties with Most Critical ENI



State Quick Facts	Arkansas	USA
Population, 2000	2,673,400	281,421,906
High School Degree Attainment, 2000	75.3%	80.4%
Bachelors Degree Attainment, 2000	16.7%	24.4%
Median Household Income, 1999	$32,182	$41,994
Per Capita Income, 1999	$16,904	$21,587
Persons Below Poverty, 1999	15.8%	12.4%

Florida

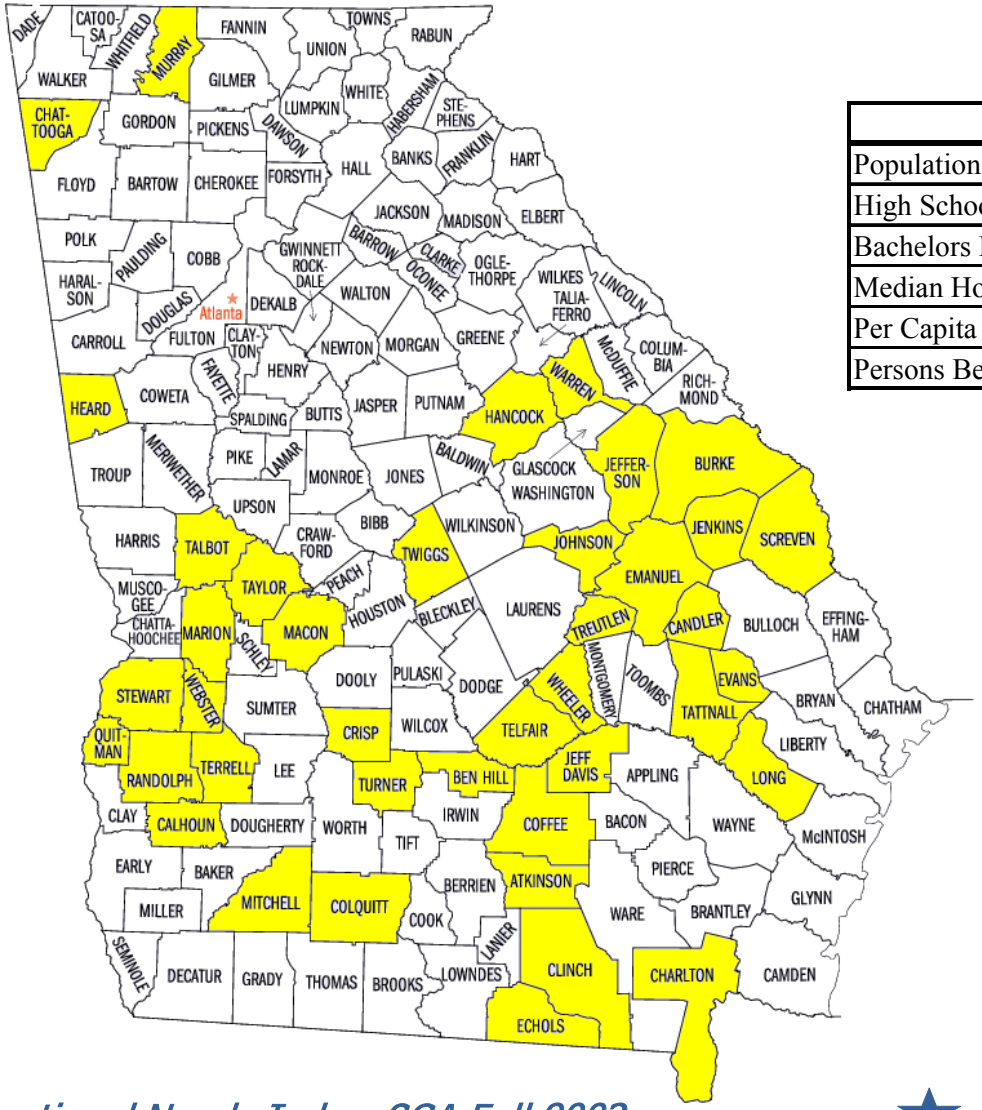
25% of Counties with Most Critical ENI



State Quick Facts	Florida	USA
Population, 2000	15,982,378	281,421,906
High School Degree Attainment, 2000	79.9%	80.4%
Bachelors Degree Attainment, 2000	22.3%	24.4%
Median Household Income, 1999	$38,819	$41,994
Per Capita Income, 1999	$21,557	$21,587
Persons Below Poverty, 1999	12.5%	12.4%

Georgia

25% of Counties with Most Critical ENI

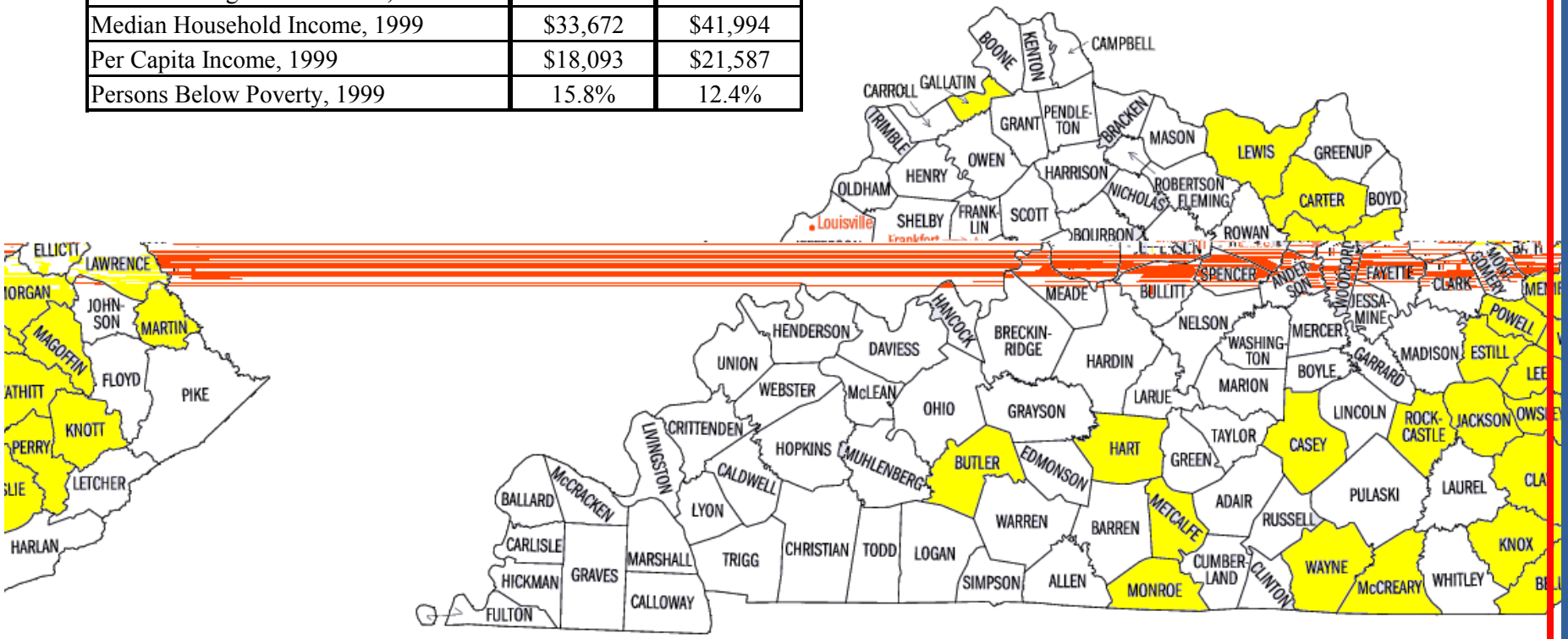


State Quick Facts	Georgia	USA
Population, 2000	8,186,453	281,421,906
High School Degree Attainment, 2000	78.6%	80.4%
Bachelors Degree Attainment, 2000	24.3%	24.4%
Median Household Income, 1999	$42,433	$41,994
Per Capita Income, 1999	$21,154	$21,587
Persons Below Poverty, 1999	13.0%	12.4%

Kentucky

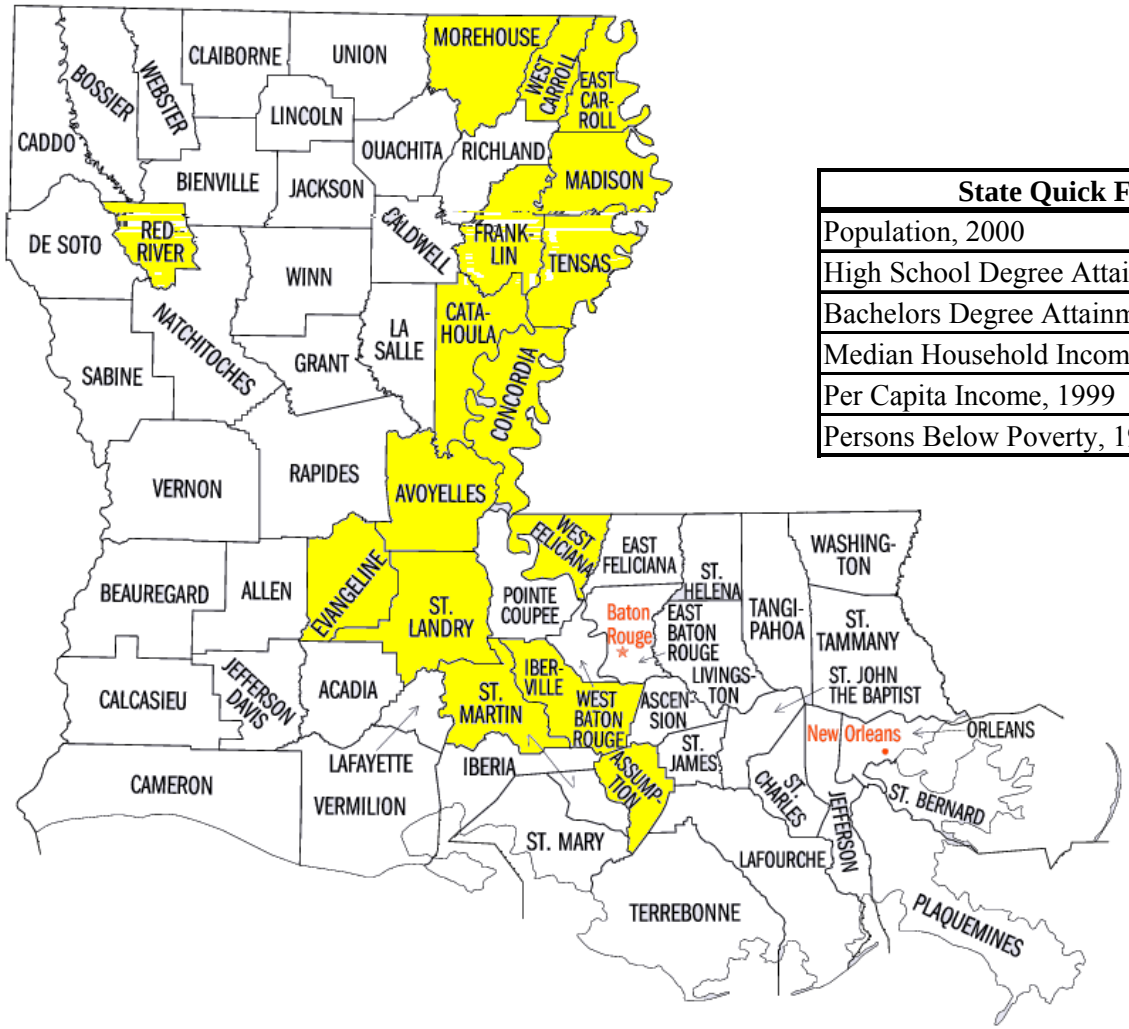
25% of Counties with Most Critical ENI

State Quick Facts	Kentucky	USA
Population, 2000	4,041,769	281,421,906
High School Degree Attainment, 2000	74.1%	80.4%
Bachelors Degree Attainment, 2000	17.1%	24.4%
Median Household Income, 1999	$33,672	$41,994
Per Capita Income, 1999	$18,093	$21,587
Persons Below Poverty, 1999	15.8%	12.4%



Louisiana

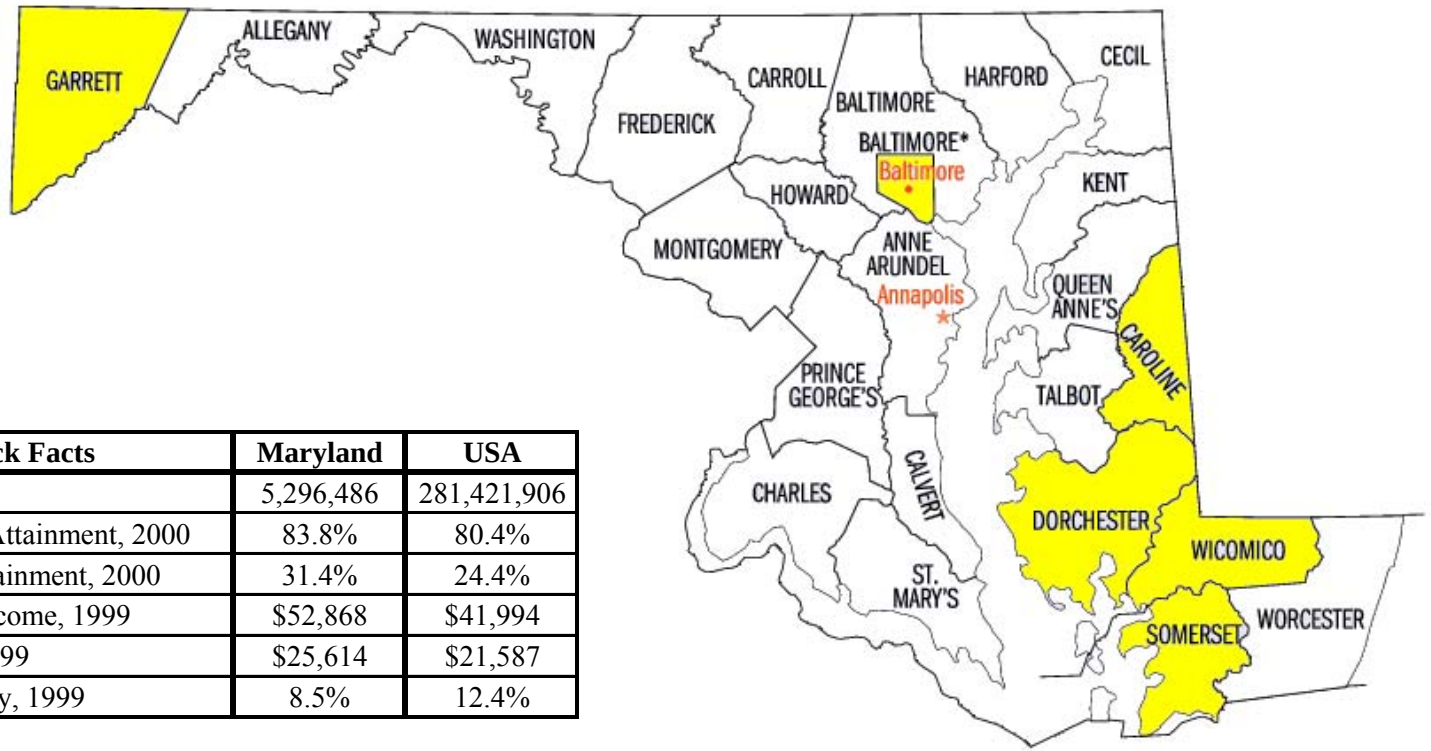
25% of Parishes with Most Critical ENI



State Quick Facts	Louisiana	USA
Population, 2000	4,468,976	281,421,906
High School Degree Attainment, 2000	74.8%	80.4%
Bachelors Degree Attainment, 2000	18.7%	24.4%
Median Household Income, 1999	$32,566	$41,994
Per Capita Income, 1999	$16,912	$21,587
Persons Below Poverty, 1999	19.6%	12.4%

Maryland

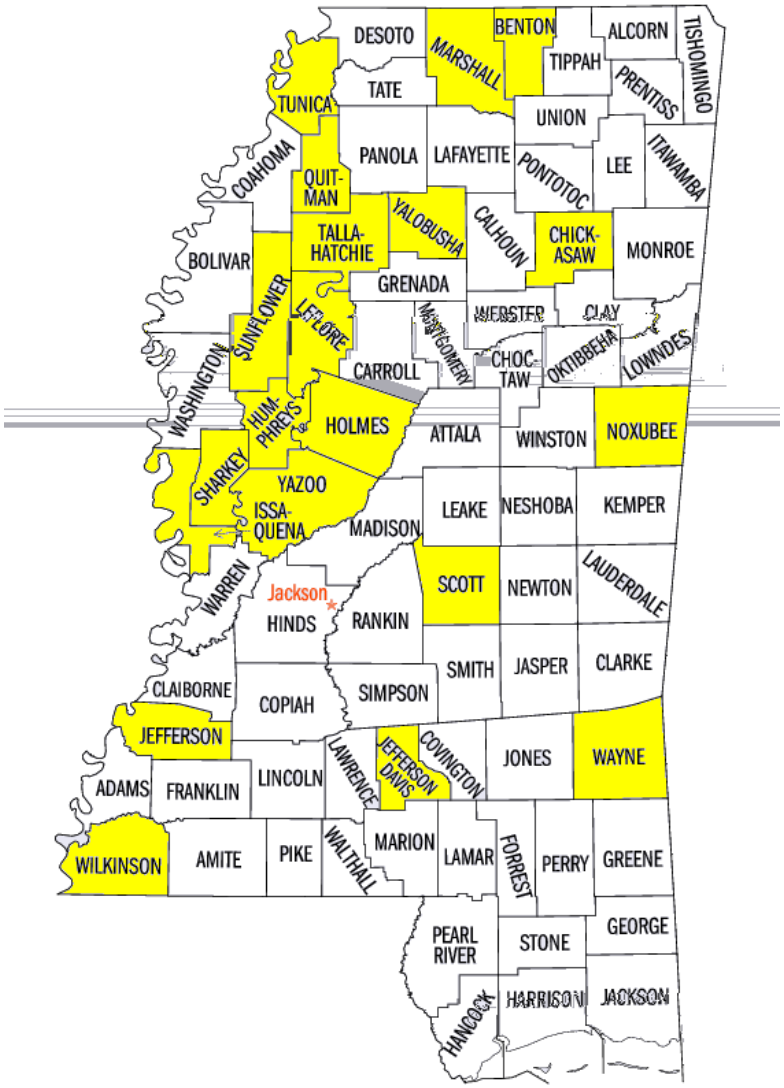
25% of Counties with Most Critical ENI



State Quick Facts	Maryland	USA
Population, 2000	5,296,486	281,421,906
High School Degree Attainment, 2000	83.8%	80.4%
Bachelors Degree Attainment, 2000	31.4%	24.4%
Median Household Income, 1999	$52,868	$41,994
Per Capita Income, 1999	$25,614	$21,587
Persons Below Poverty, 1999	8.5%	12.4%

Mississippi

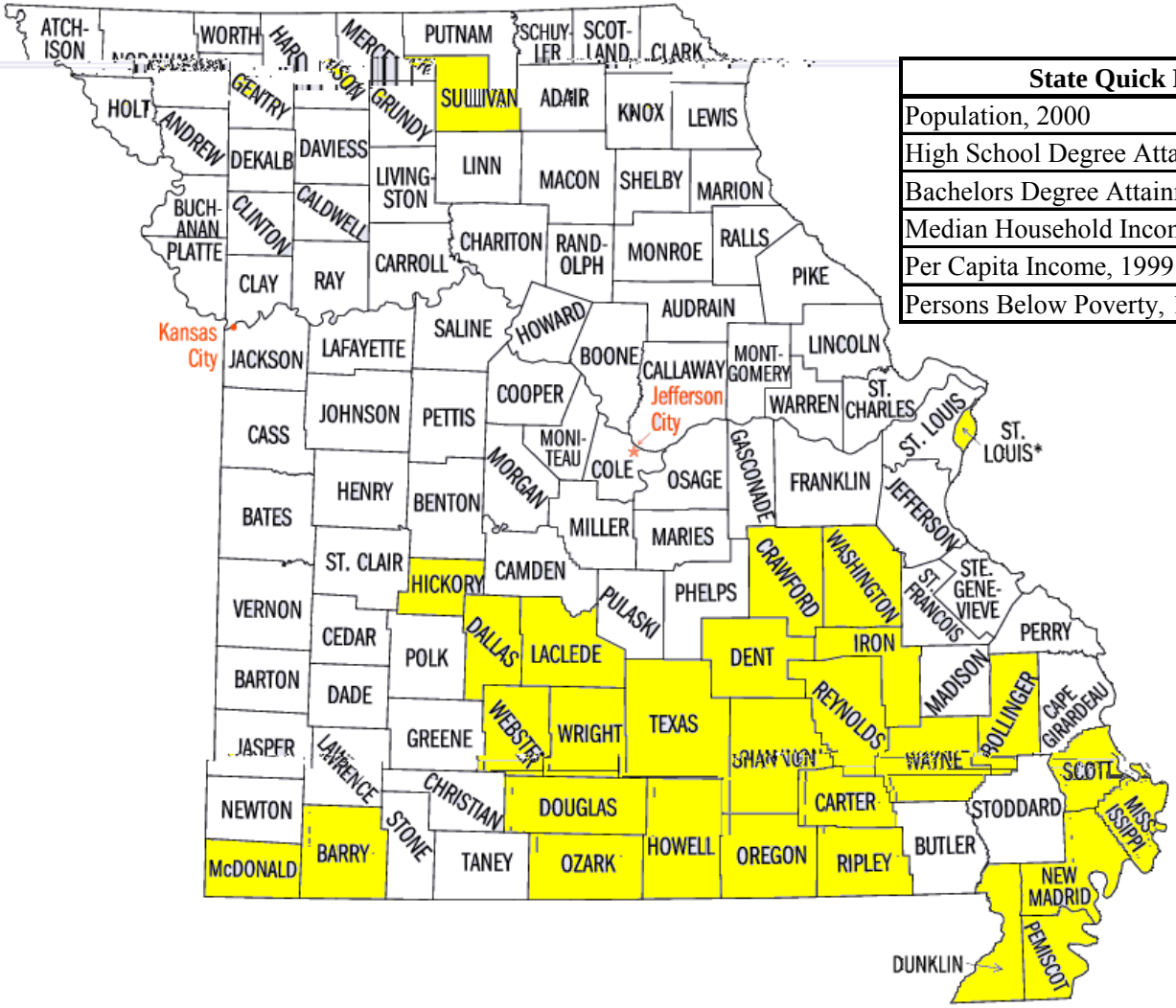
25% of Counties with Most Critical ENI



State Quick Facts	Mississippi	USA
Population, 2000	2,844,658	281,421,906
High School Degree Attainment, 2000	72.9%	80.4%
Bachelors Degree Attainment, 2000	16.9%	24.4%
Median Household Income, 1999	$31,330	$41,994
Per Capita Income, 1999	$15,853	$21,587
Persons Below Poverty, 1999	19.9%	12.4%

Missouri

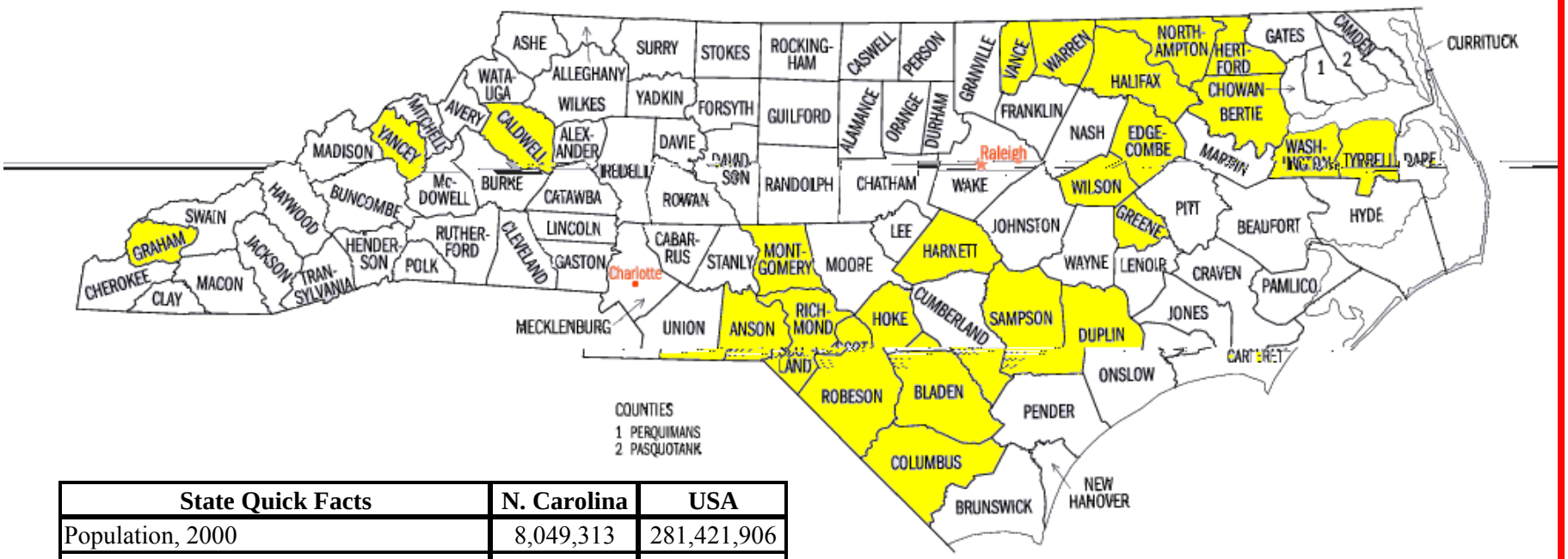
25% of Counties with Most Critical ENI



State Quick Facts	Missouri	USA
Population, 2000	5,595,211	281,421,906
High School Degree Attainment, 2000	81.3%	80.4%
Bachelors Degree Attainment, 2000	21.6%	24.4%
Median Household Income, 1999	$37,934	$41,994
Per Capita Income, 1999	$19,936	$21,587
Persons Below Poverty, 1999	11.7%	12.4%

North Carolina

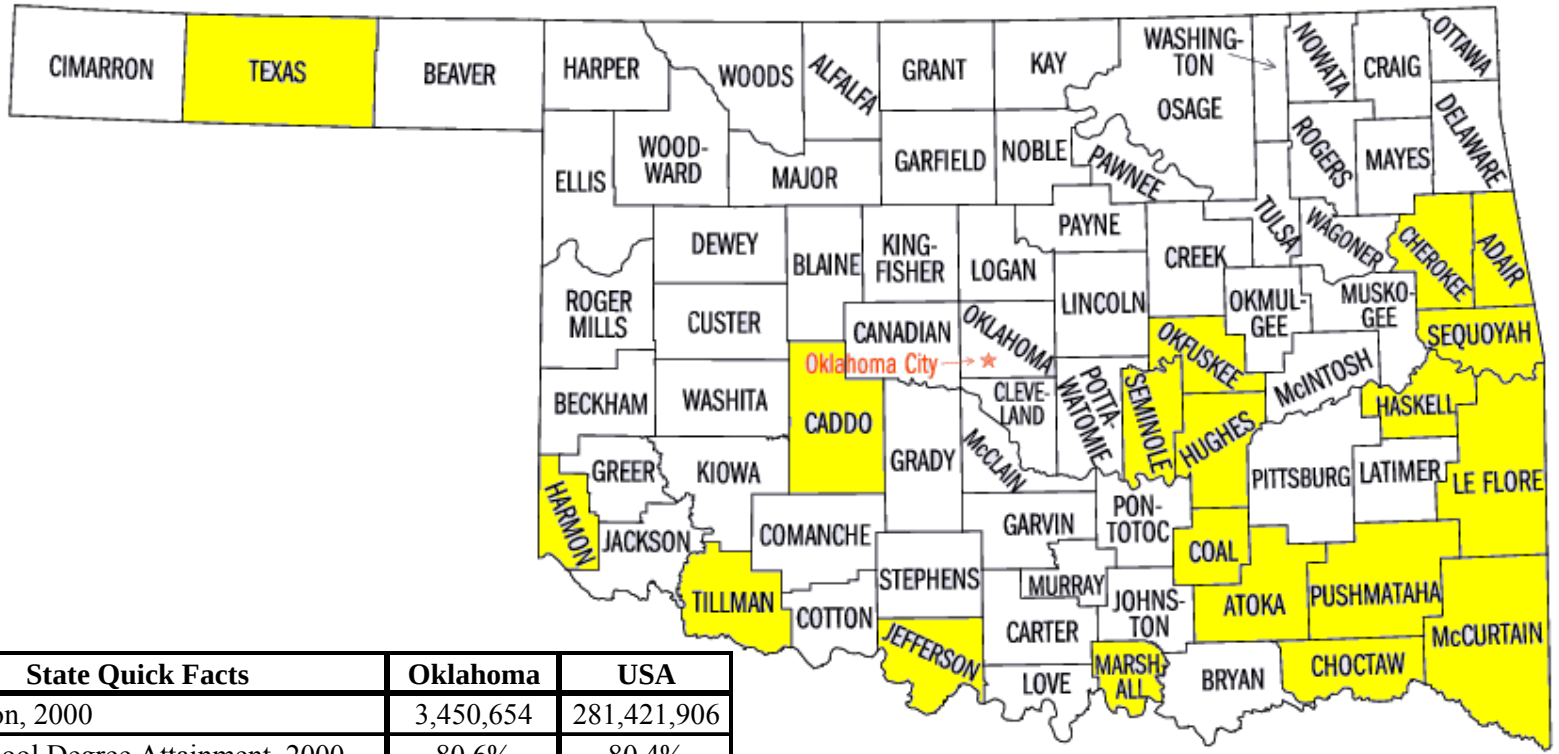
25% of Counties with Most Critical ENI



State Quick Facts	N. Carolina	USA
Population, 2000	8,049,313	281,421,906
High School Degree Attainment, 2000	78.1%	80.4%
Bachelors Degree Attainment, 2000	22.5%	24.4%
Median Household Income, 1999	$39,184	$41,994
Per Capita Income, 1999	$20,307	$21,587
Persons Below Poverty, 1999	12.3%	12.4%

Oklahoma

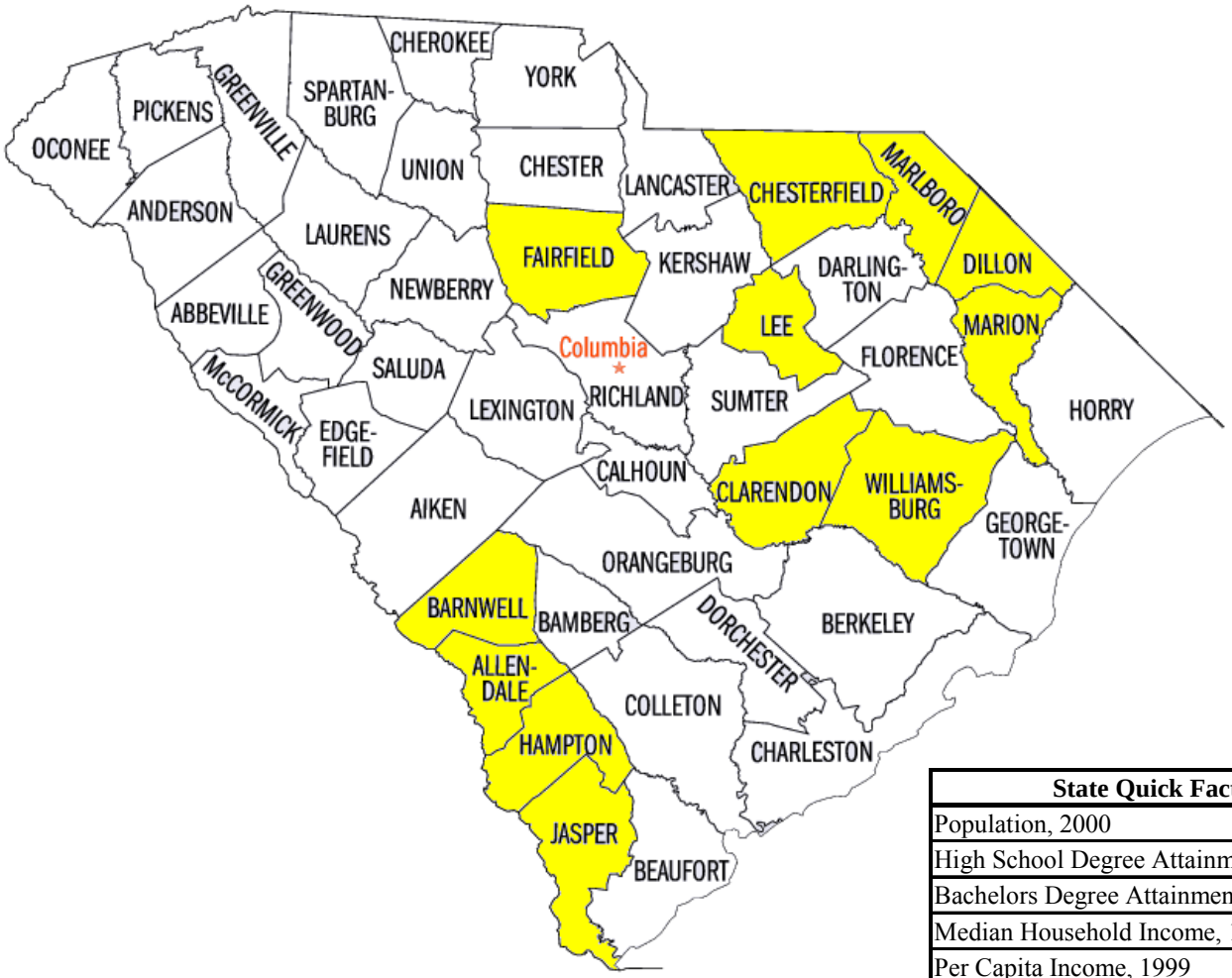
25% of Counties with Most Critical ENI



State Quick Facts	Oklahoma	USA
Population, 2000	3,450,654	281,421,906
High School Degree Attainment, 2000	80.6%	80.4%
Bachelors Degree Attainment, 2000	20.3%	24.4%
Median Household Income, 1999	$33,400	$41,994
Per Capita Income, 1999	$17,646	$21,587
Persons Below Poverty, 1999	14.7%	12.4%

South Carolina

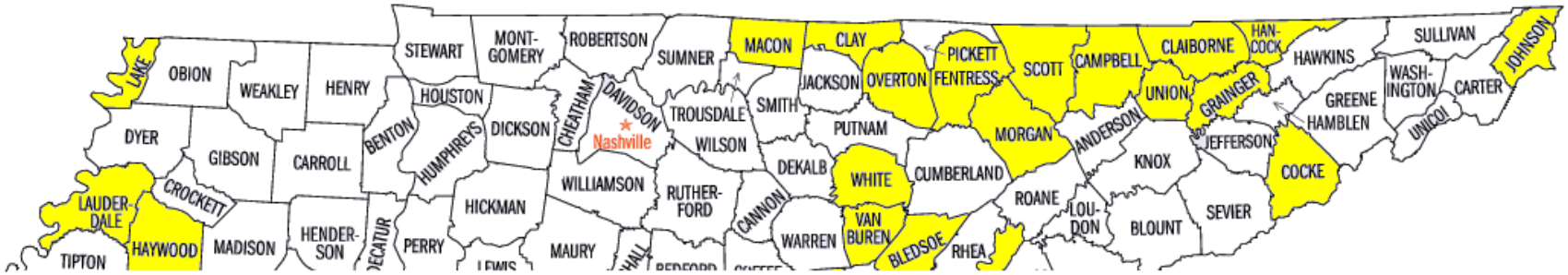
25% of Counties with Most Critical ENI



State Quick Facts	S. Carolina	USA
Population, 2000	4,012,012	281,421,906
High School Degree Attainment, 2000	76.3%	80.4%
Bachelors Degree Attainment, 2000	20.4%	24.4%
Median Household Income, 1999	$37,082	$41,994
Per Capita Income, 1999	$18,795	$21,587
Persons Below Poverty, 1999	14.1%	12.4%

Tennessee

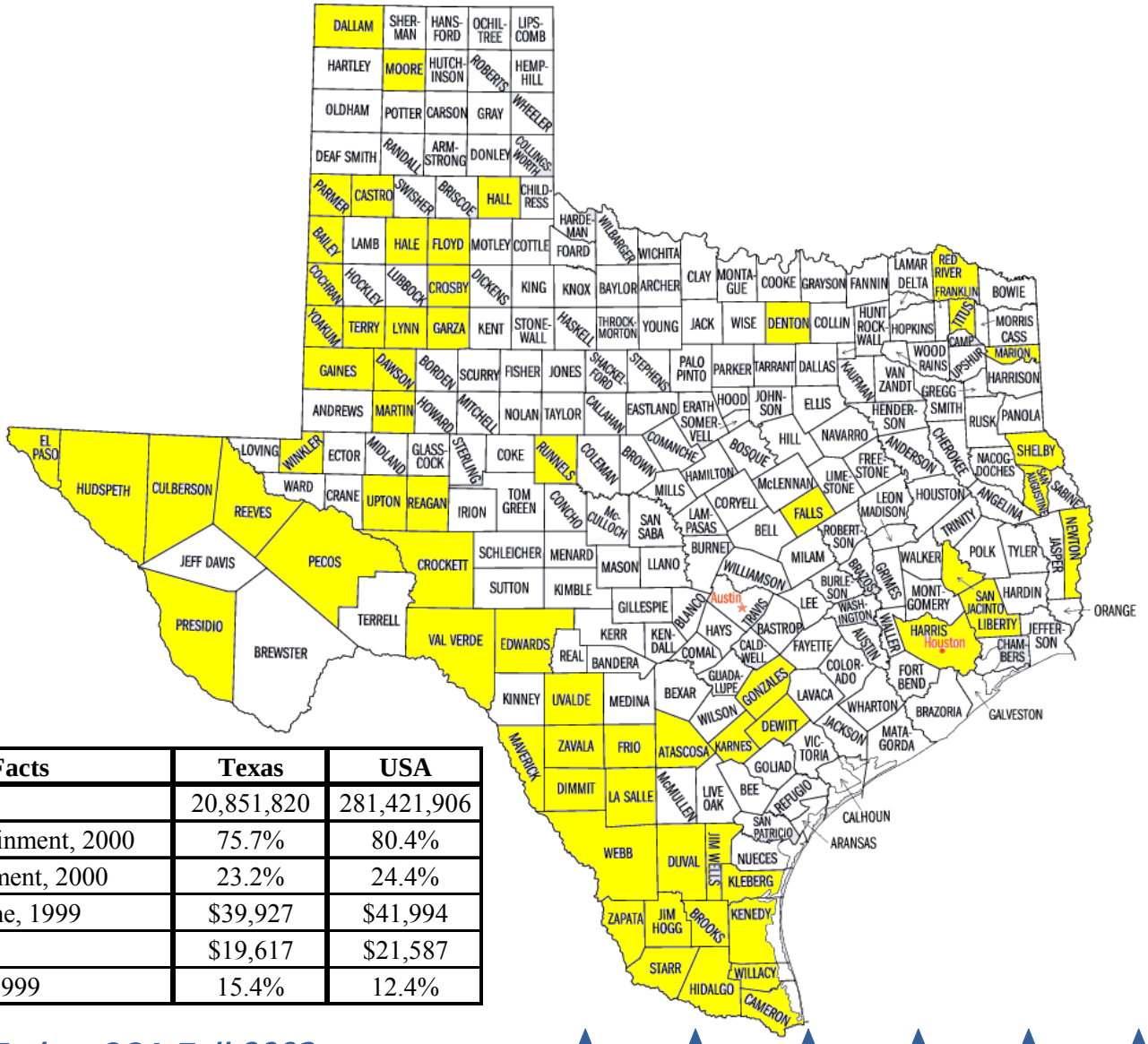
25% of Counties with Most Critical ENI



State Quick Facts	Tennessee	USA
Population, 2000	5,689,283	281,421,906
High School Degree Attainment, 2000	75.9%	80.4%
Bachelors Degree Attainment, 2000	19.6%	24.4%
Median Household Income, 1999	$36,360	$41,994
Per Capita Income, 1999	$19,393	$21,587
Persons Below Poverty, 1999	13.5%	12.4%

Texas

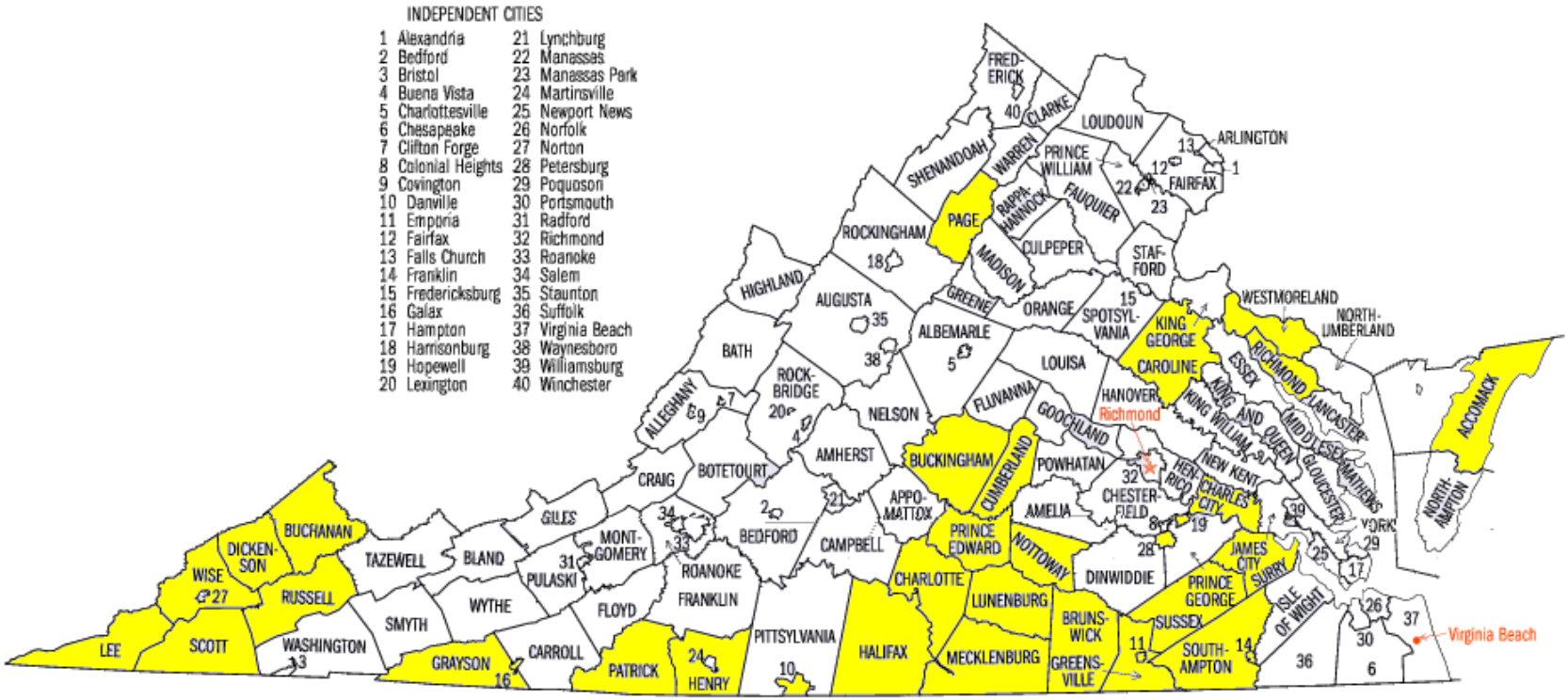
25% of Counties with Most Critical ENI



State Quick Facts	Texas	USA
Population, 2000	20,851,820	281,421,906
High School Degree Attainment, 2000	75.7%	80.4%
Bachelors Degree Attainment, 2000	23.2%	24.4%
Median Household Income, 1999	$39,927	$41,994
Per Capita Income, 1999	$19,617	$21,587
Persons Below Poverty, 1999	15.4%	12.4%

Virginia

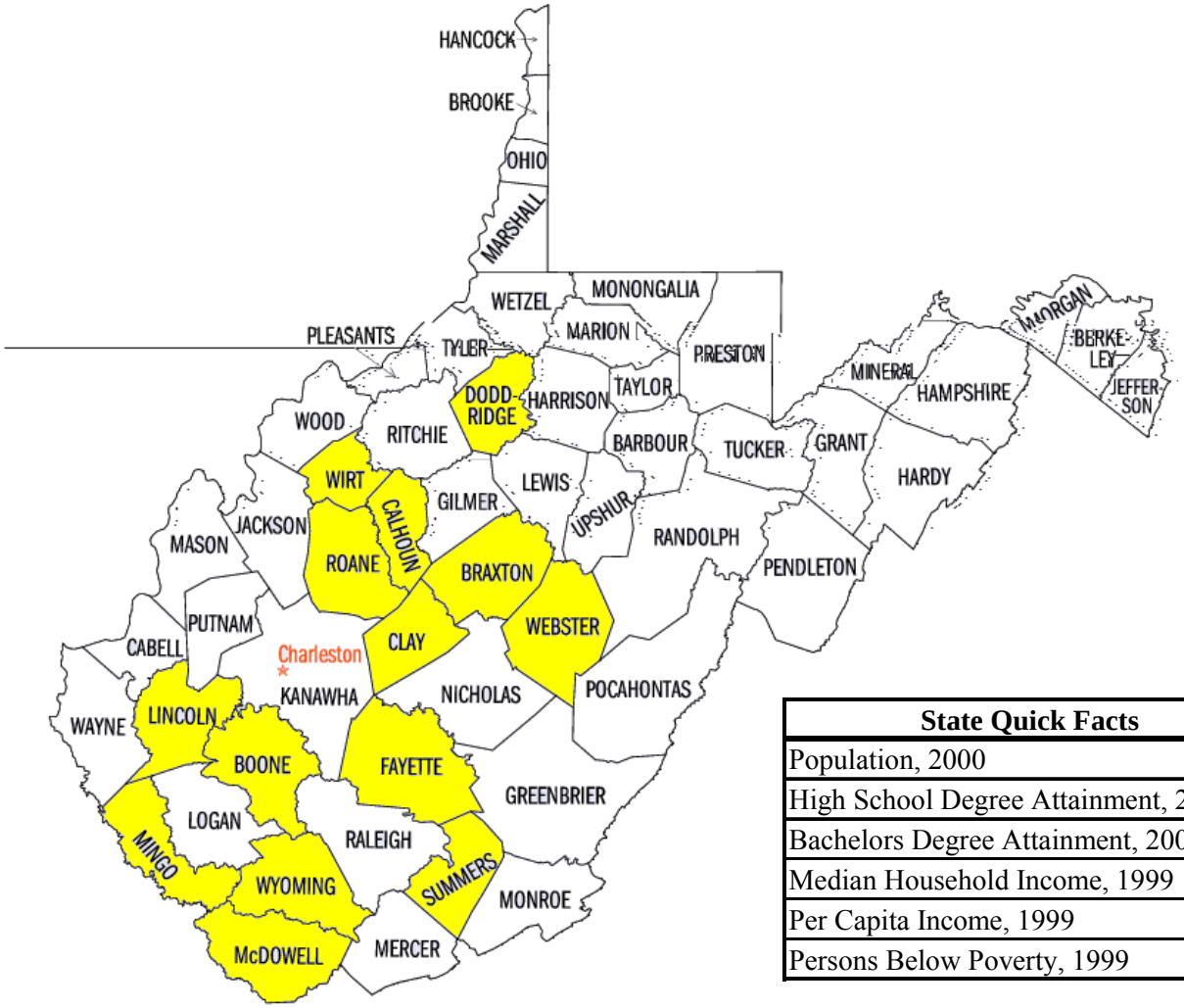
25% of Counties with Most Critical ENI



State Quick Facts	Virginia	USA
Population, 2000	7,078,515	281,421,906
High School Degree Attainment, 2000	81.5%	80.4%
Bachelors Degree Attainment, 2000	29.5%	24.4%
Median Household Income, 1999	$46,677	$41,994
Per Capita Income, 1999	$23,975	$21,587
Persons Below Poverty, 1999	9.6%	12.4%

West Virginia

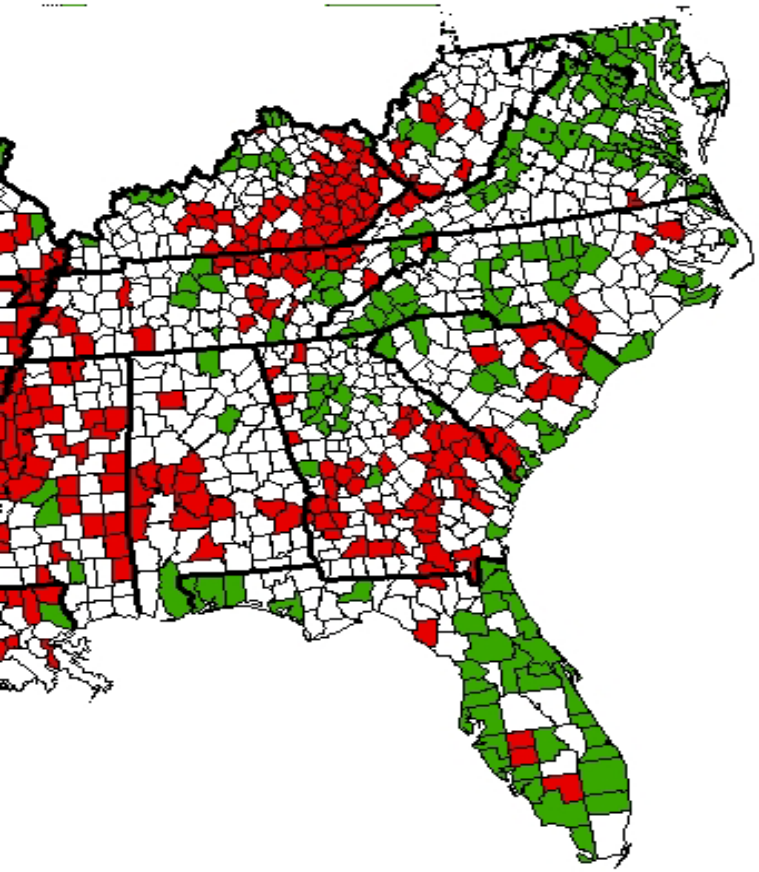
25% of Counties with Most Critical ENI

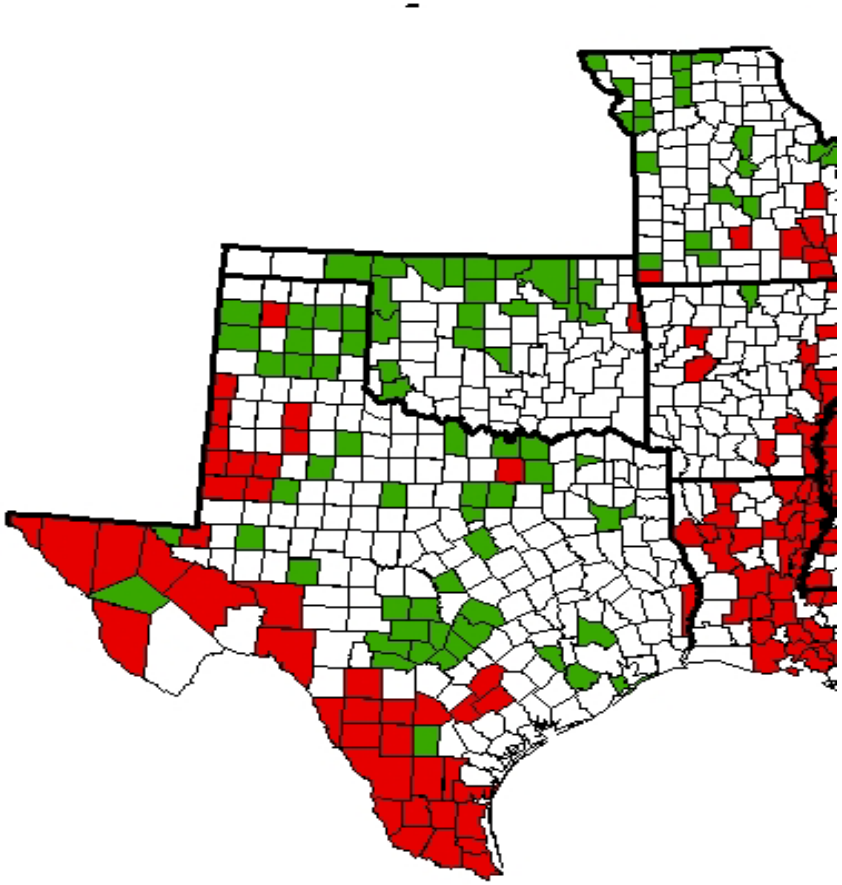


State Quick Facts	W.Virginia	USA
Population, 2000	1,803,344	281,421,906
High School Degree Attainment, 2000	75.2%	80.4%
Bachelors Degree Attainment, 2000	14.8%	24.4%
Median Household Income, 1999	$29,696	$41,994
Per Capita Income, 1999	$16,477	$21,587
Persons Below Poverty, 1999	17.9%	12.4%

The Educational Needs Index

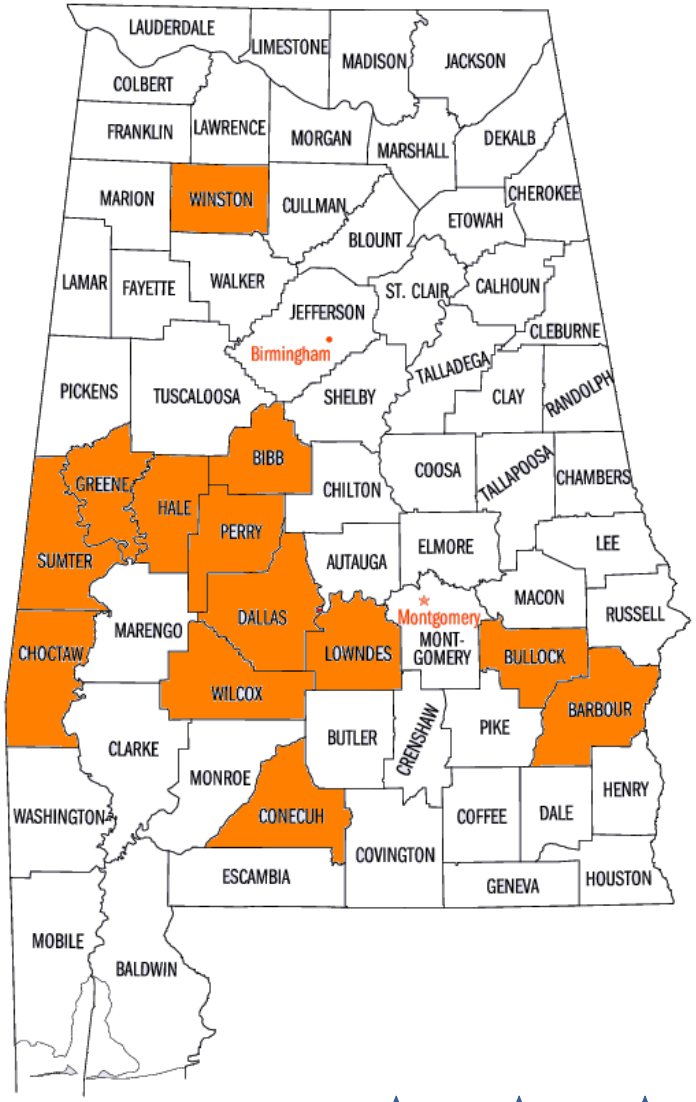
An overview of educational needs for the 1,538 Counties/Parishes in the Southern States.





Alabama

ENI - Most Critical 300 in South



Educational Needs Index, SGA Fall 2003

Alabama

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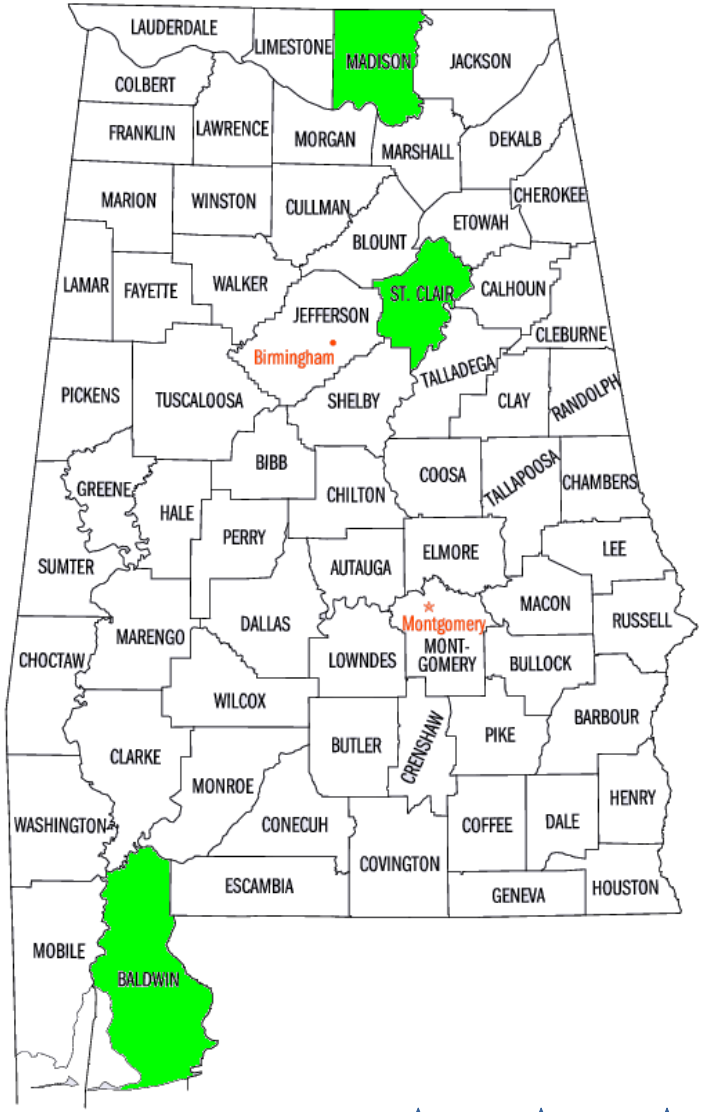

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Arkansas

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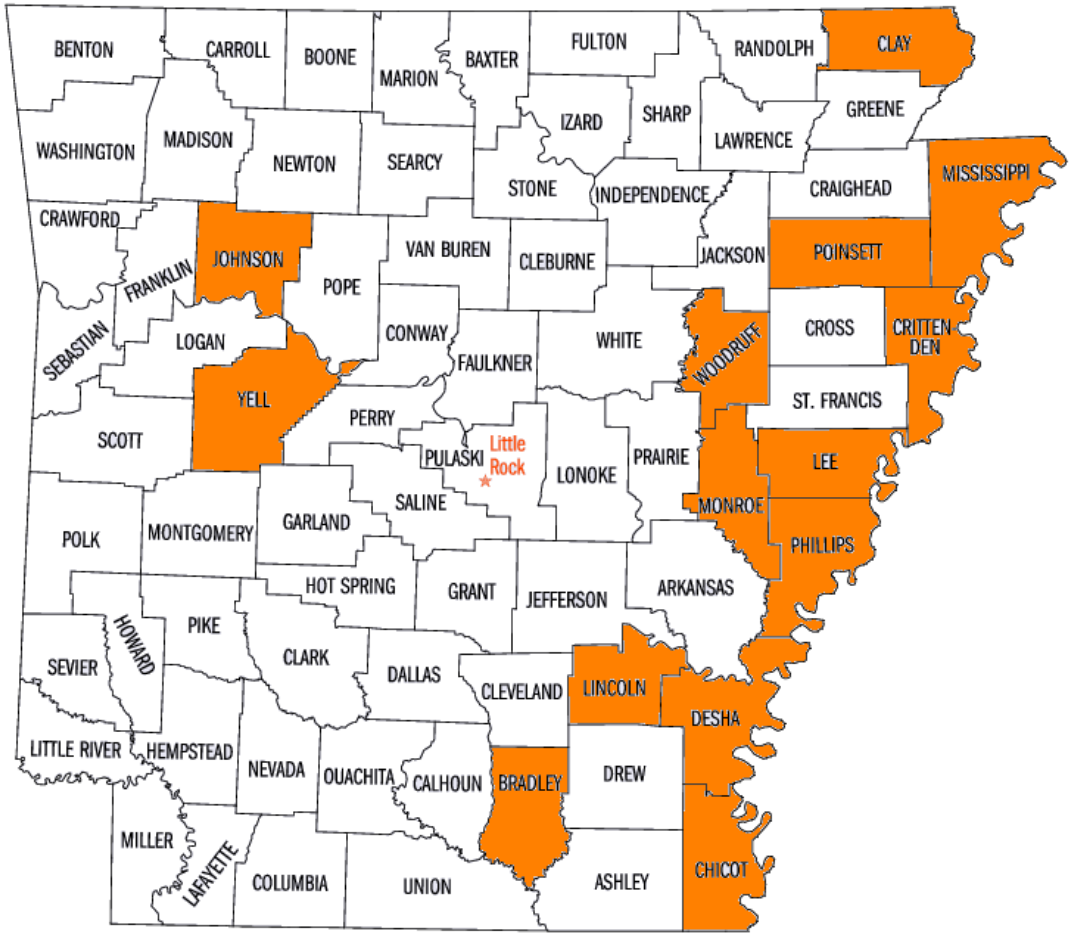

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ENI – Least Critical 300 in South

Florida

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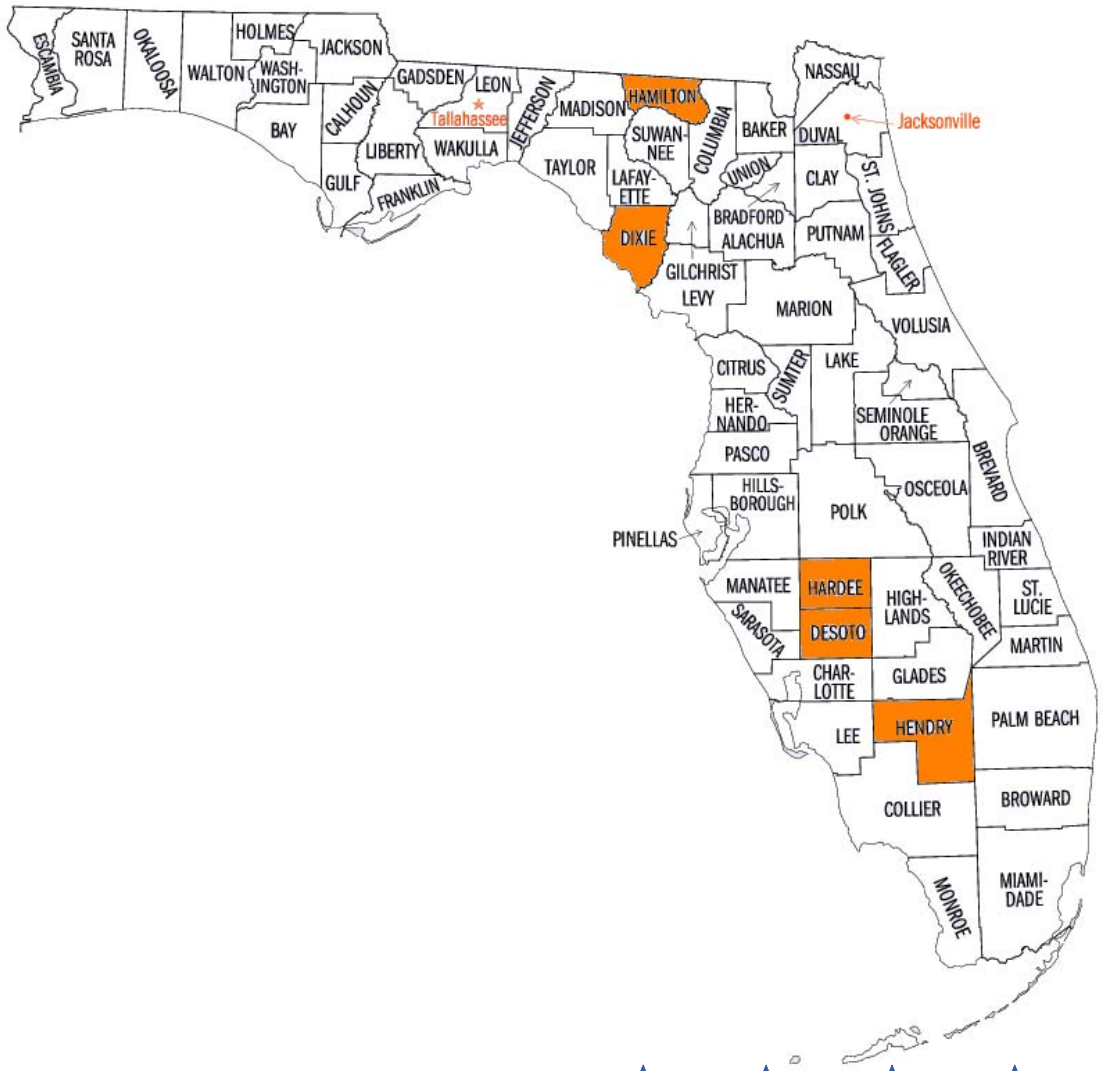

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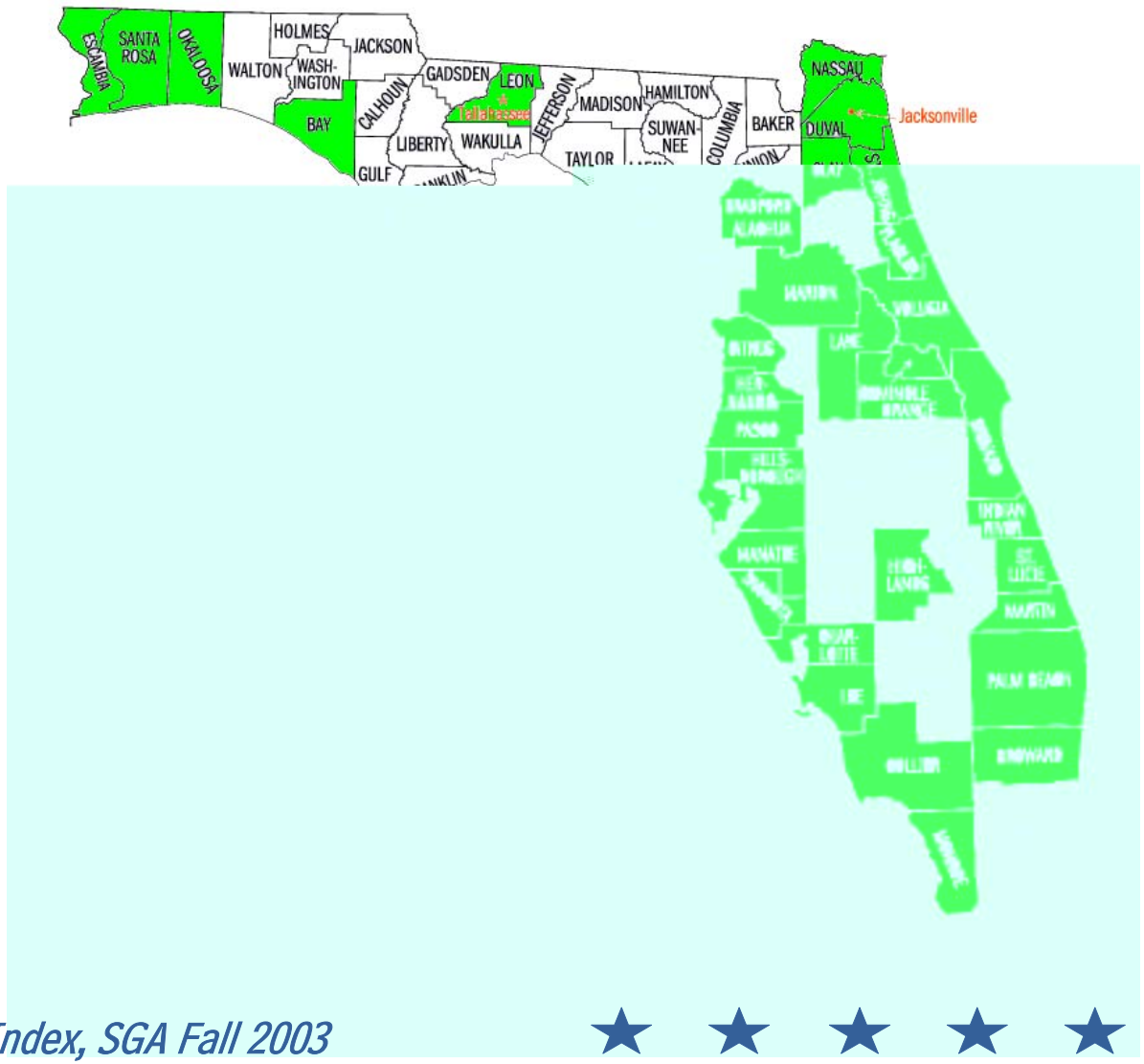
Florida

ENI – Least Critical 300 in South



Educational Needs Index, SGA Fall 2003

Georgia

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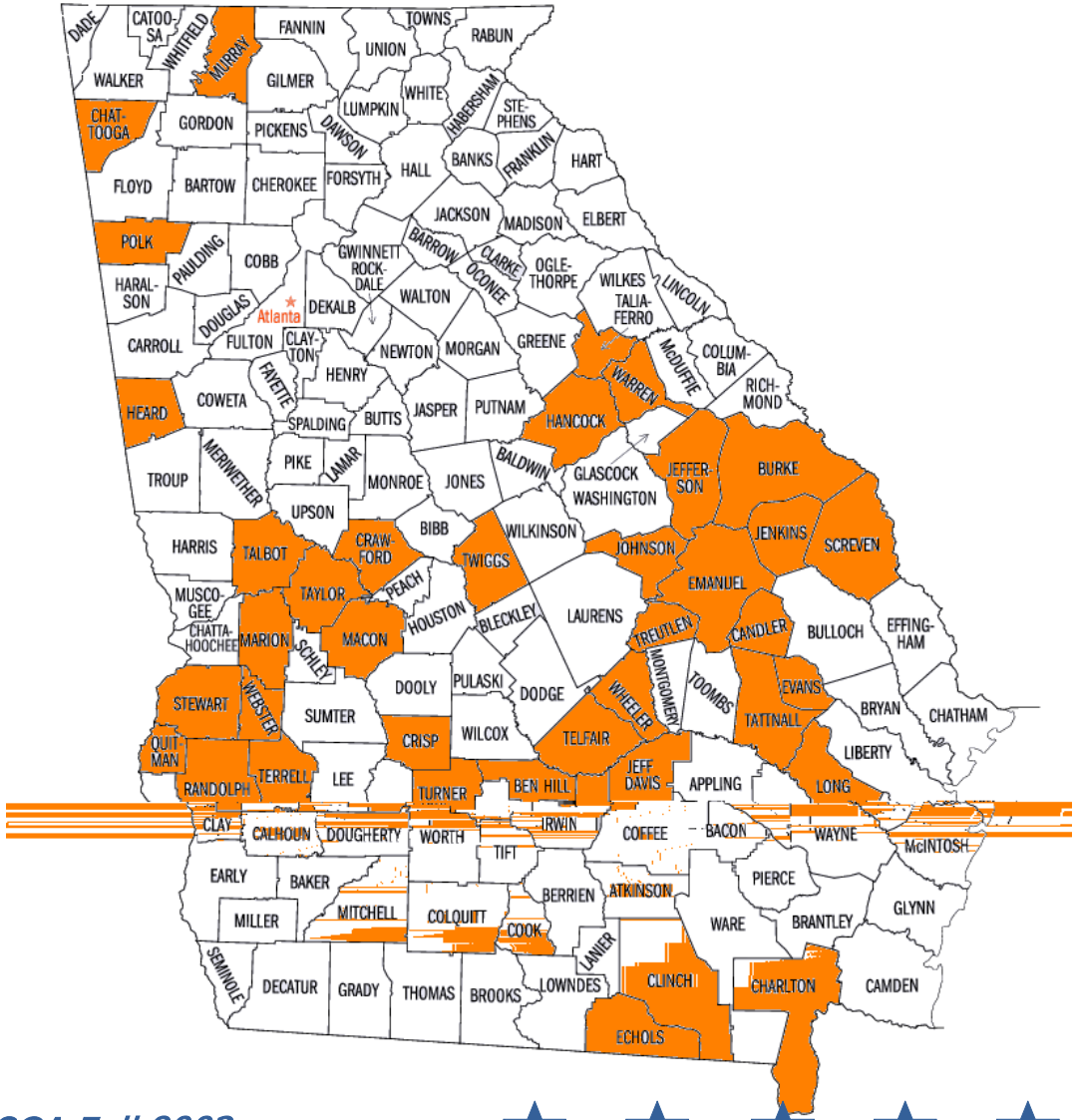

Educational Needs Index, SGA Fall 2003

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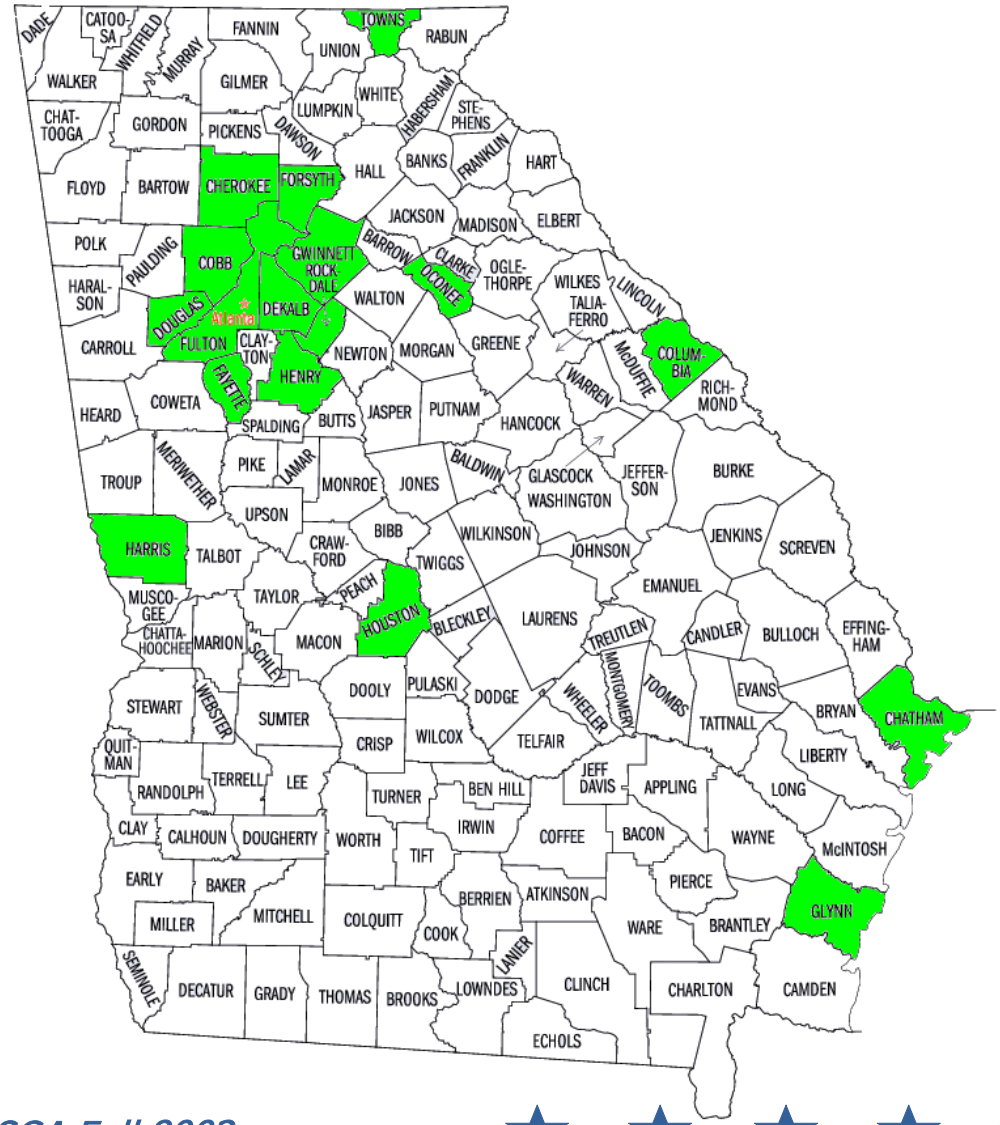

Educational Needs Index, SGA Fall 2003

Kentucky

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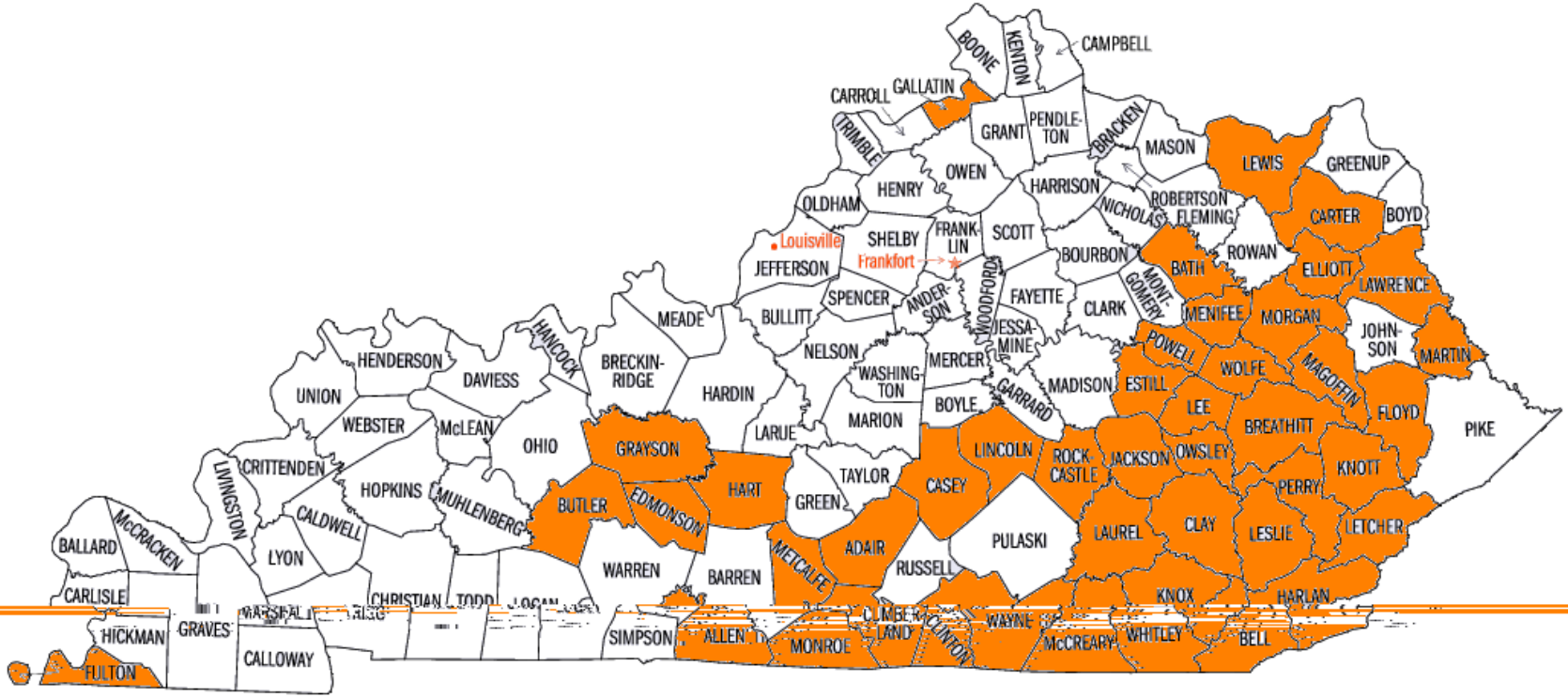

Educational Needs Index, SGA Fall 2003

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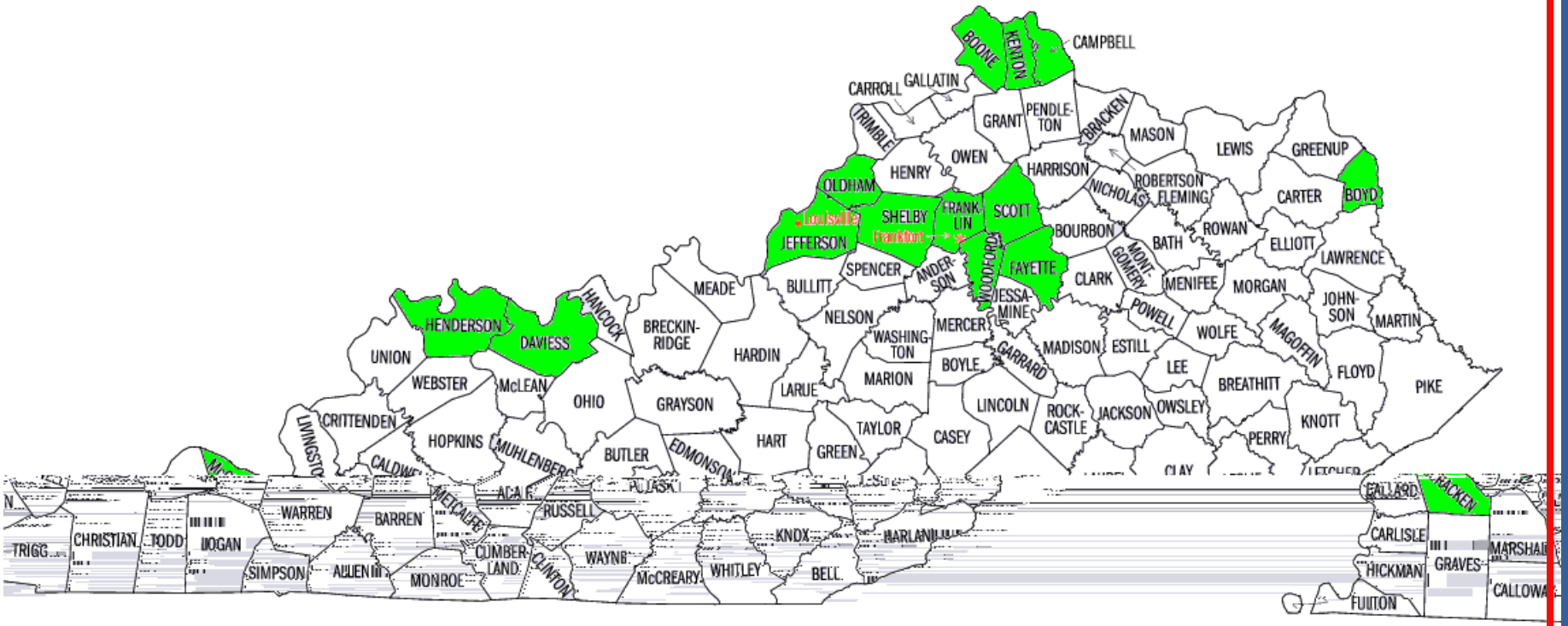

Educational Needs Index, SGA Fall 2003

Louisiana

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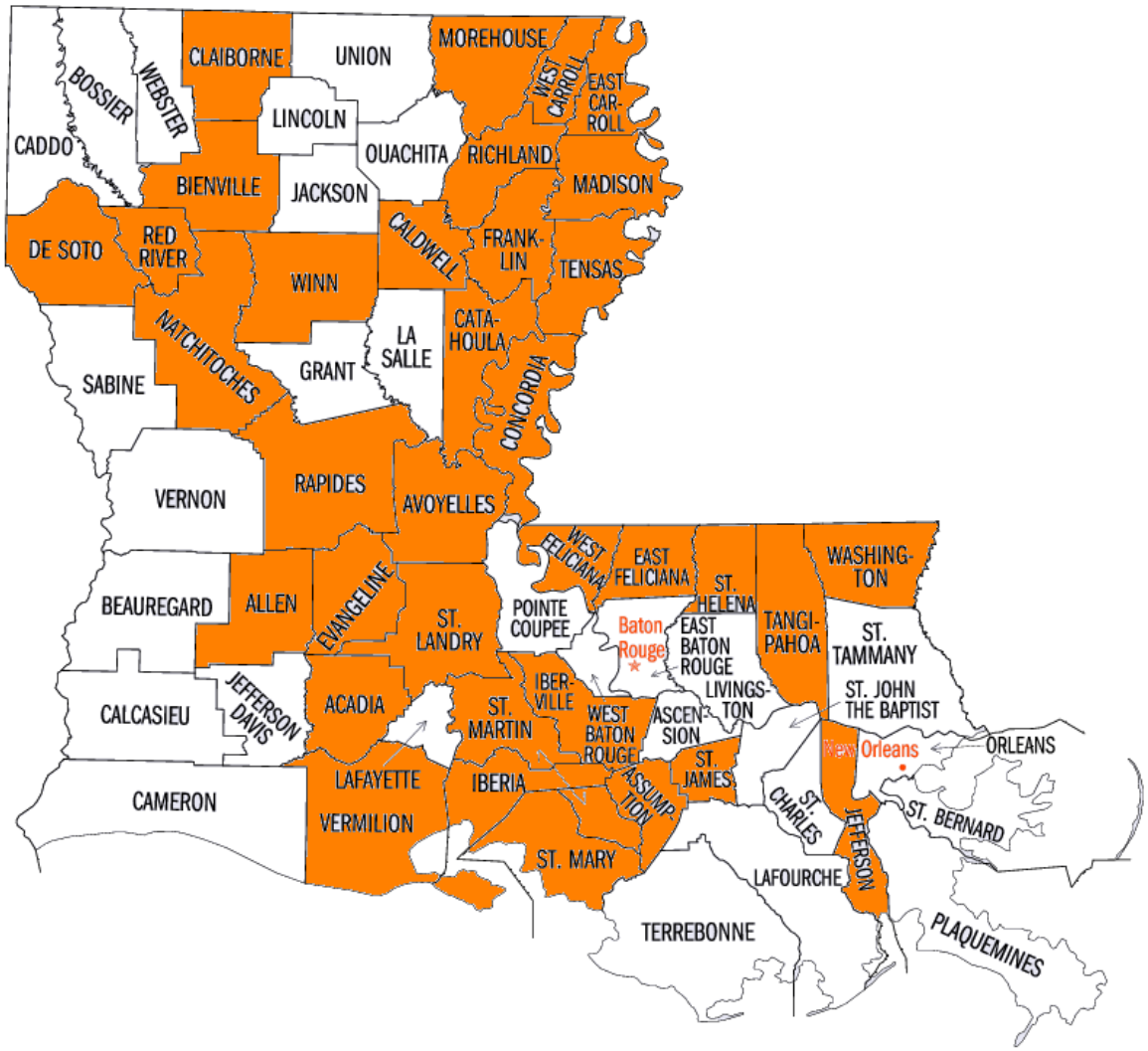

Educational Needs Index, SGA Fall 2003

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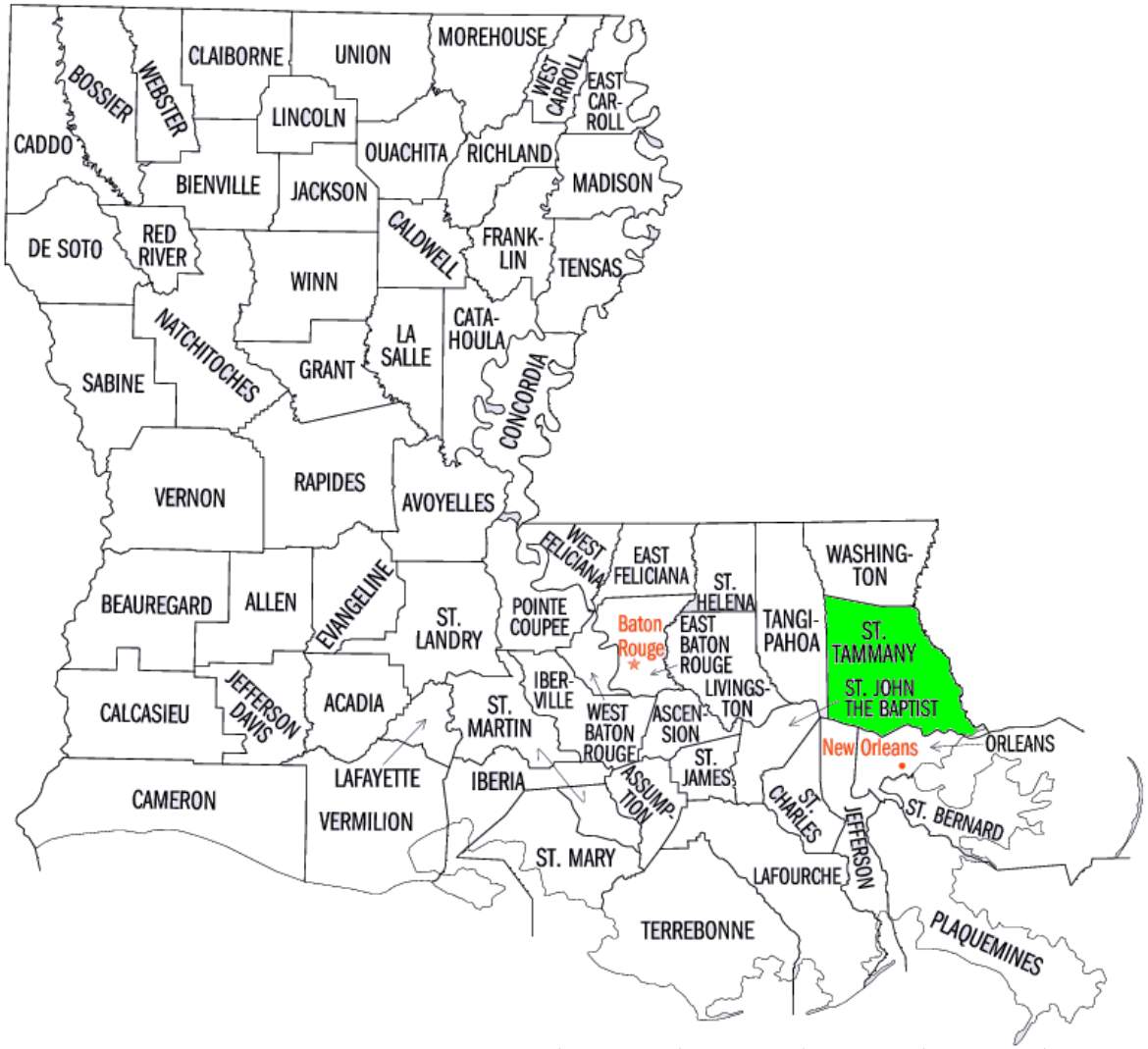

Educational Needs Index, SGA Fall 2003

Maryland

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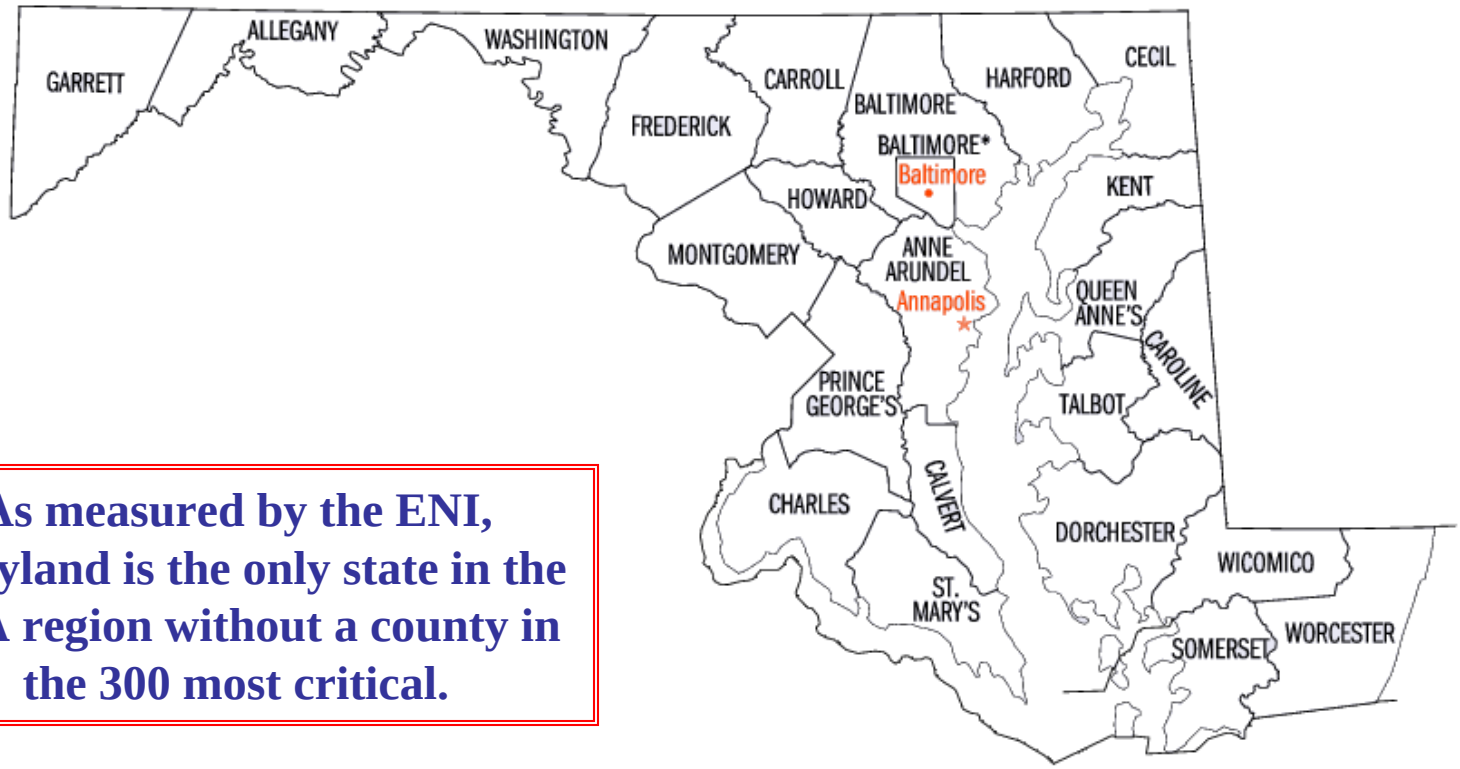
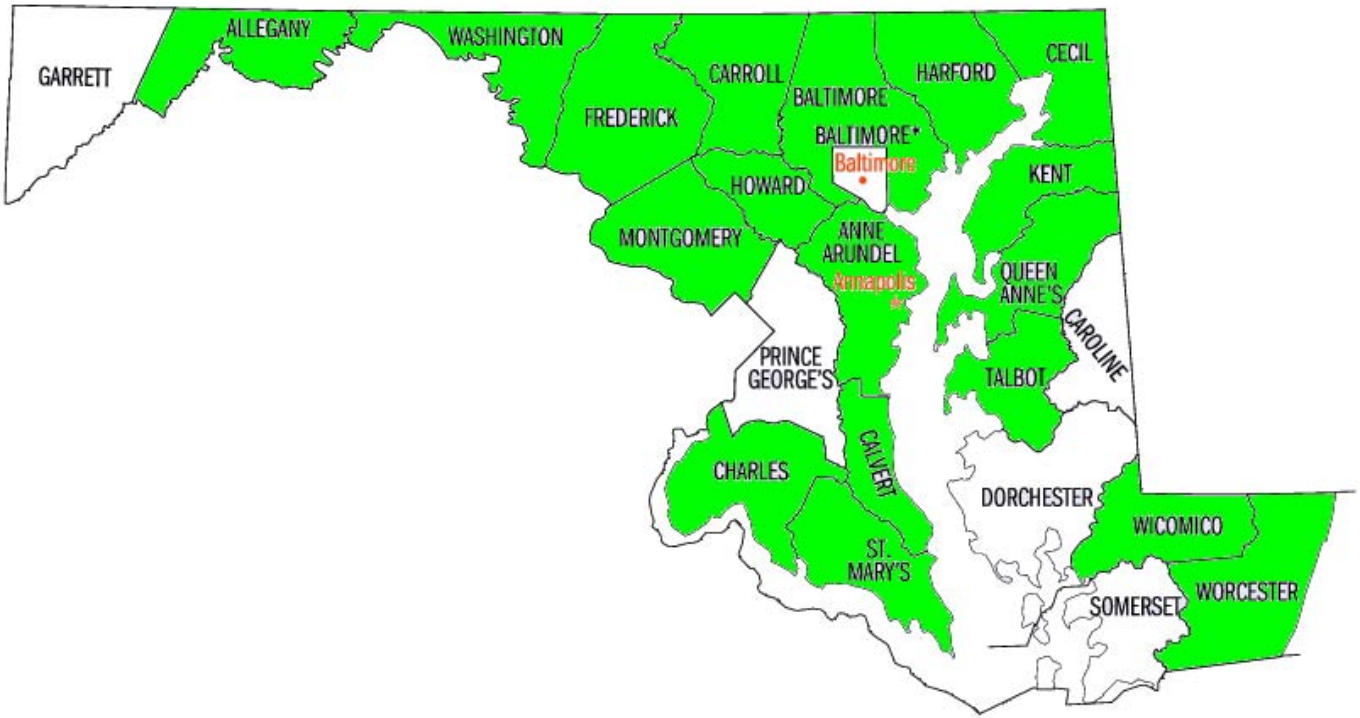


As measured by the ENI, Maryland is the only state in the SGA region without a county in the 300 most critical.

Educational Needs Index, SGA Fall 2003

Maryland

ENI – Least Critical 300 in South



Mississippi

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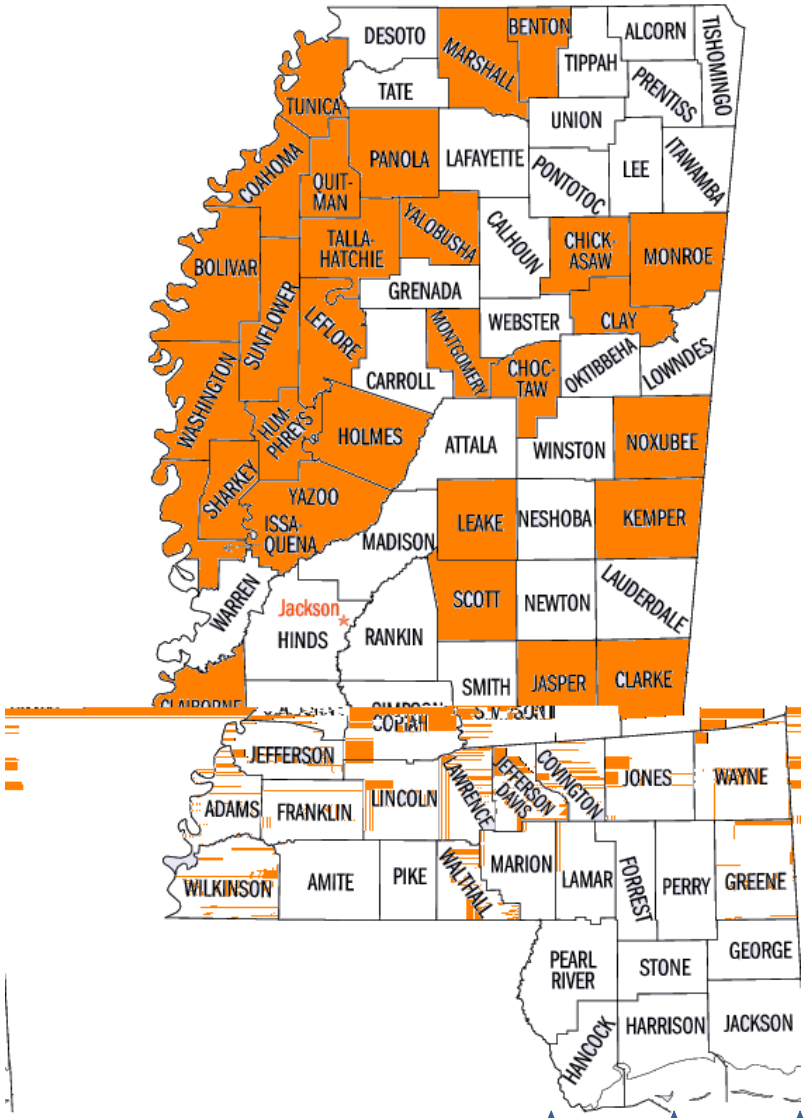

Educational Needs Index, SGA Fall 2003

Mississippi

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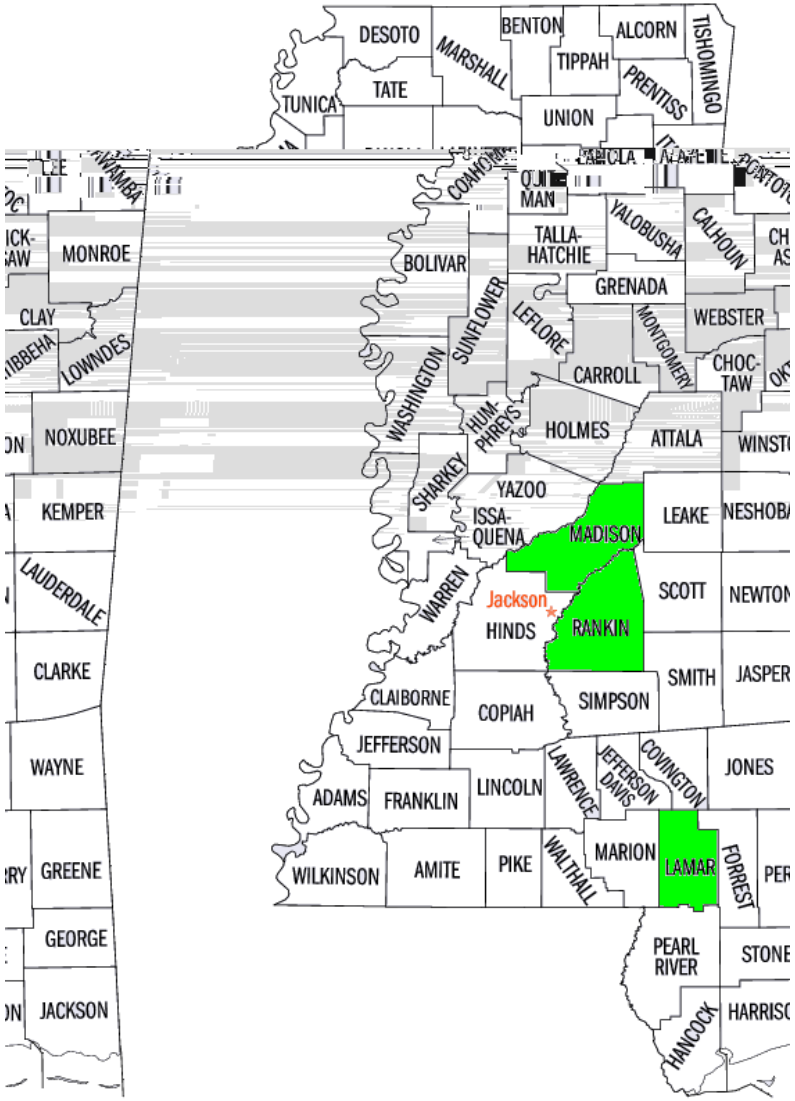

Educational Needs Index, SGA Fall 2003

Missouri

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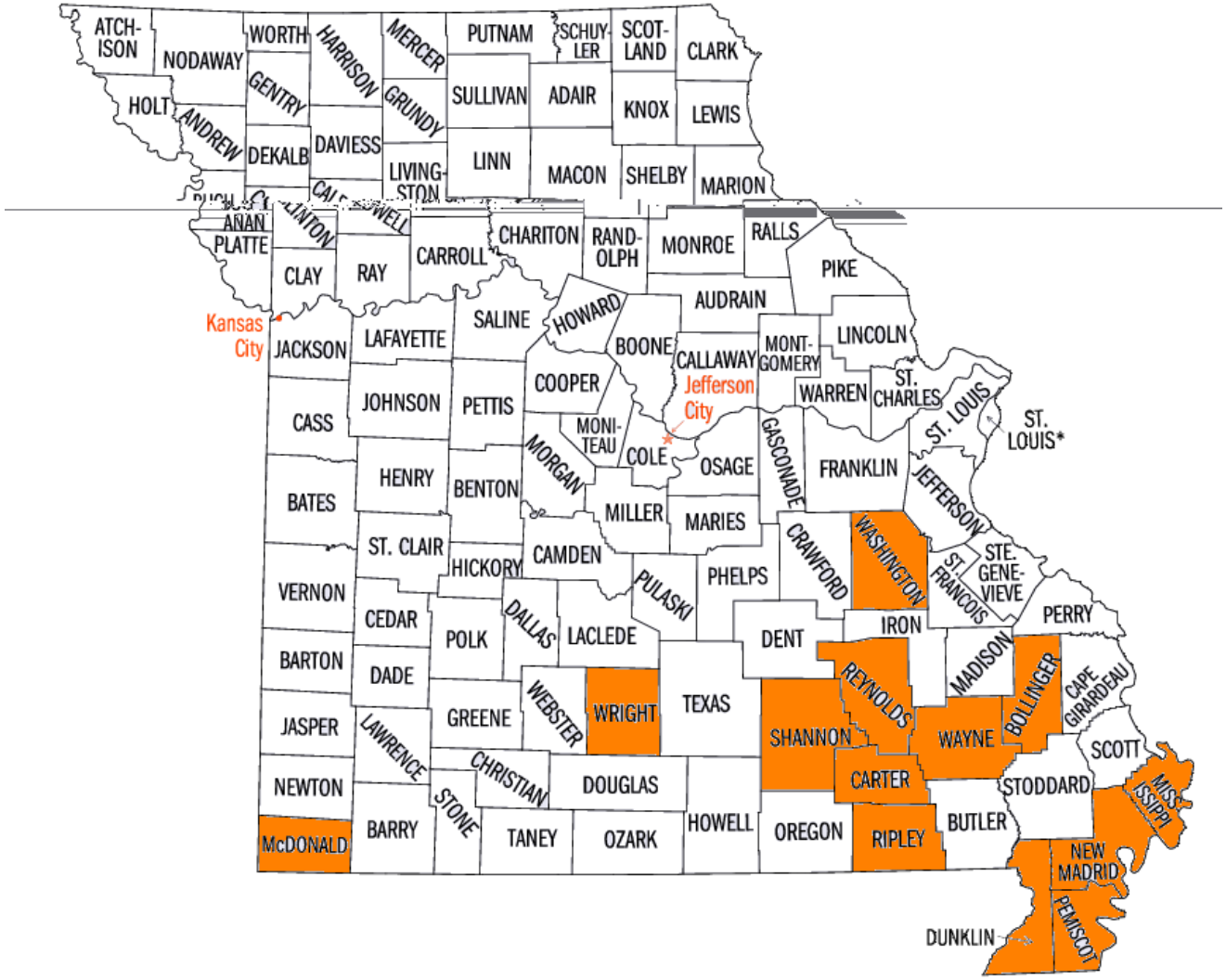

Educational Needs Index, SGA Fall 2003

Missouri

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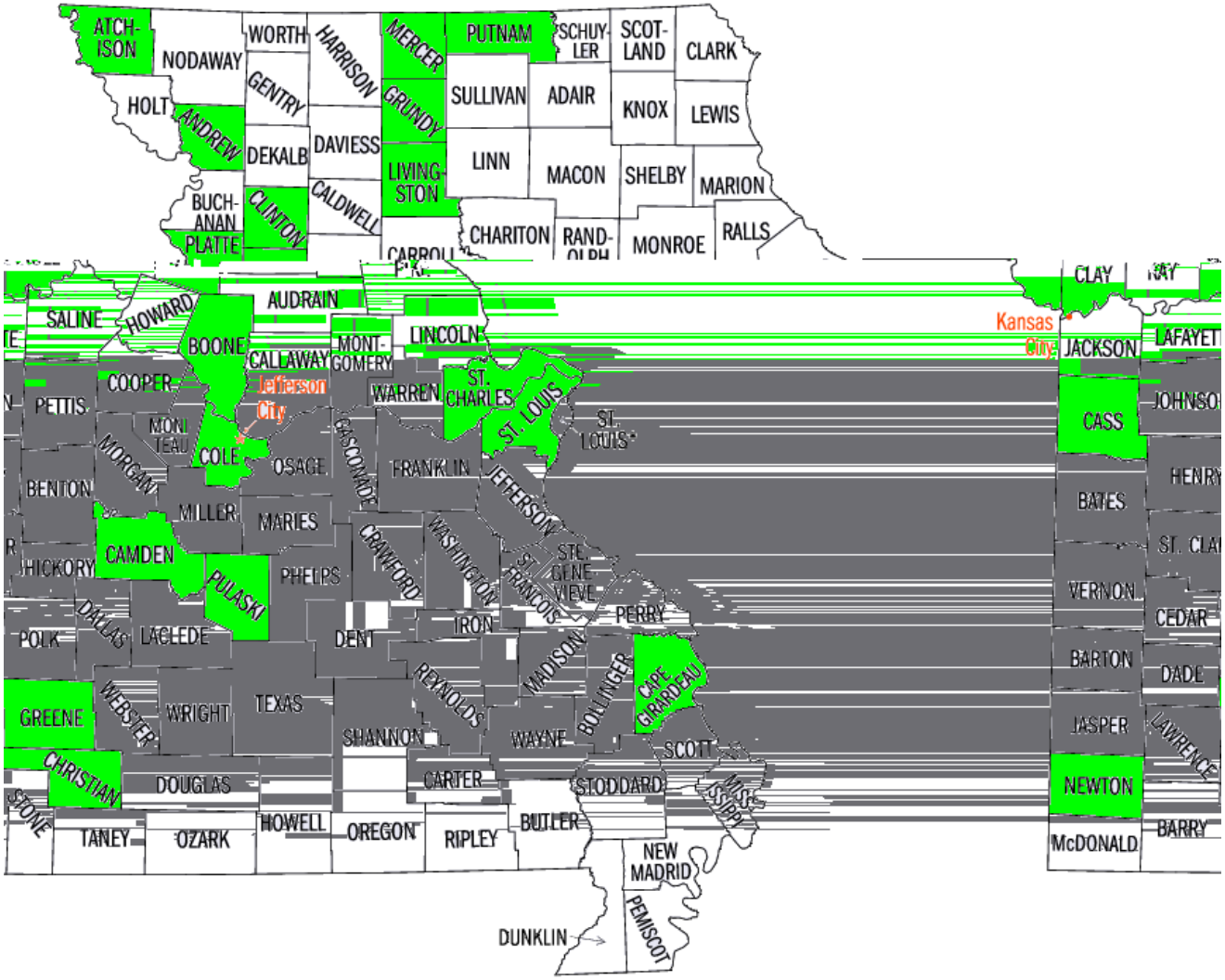
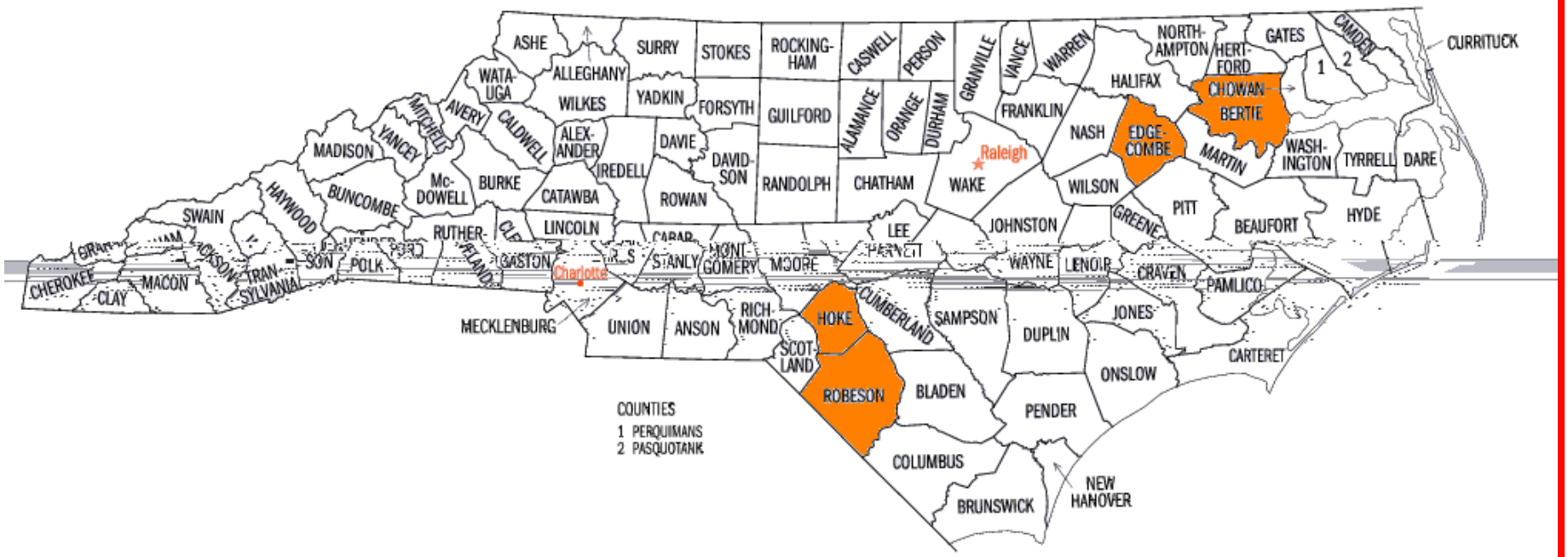


Educational Needs Index, SGA Fall 2003

North Carolina

ENI – Most Critical 300 in South



Educational Needs Index, SGA Fall 2003

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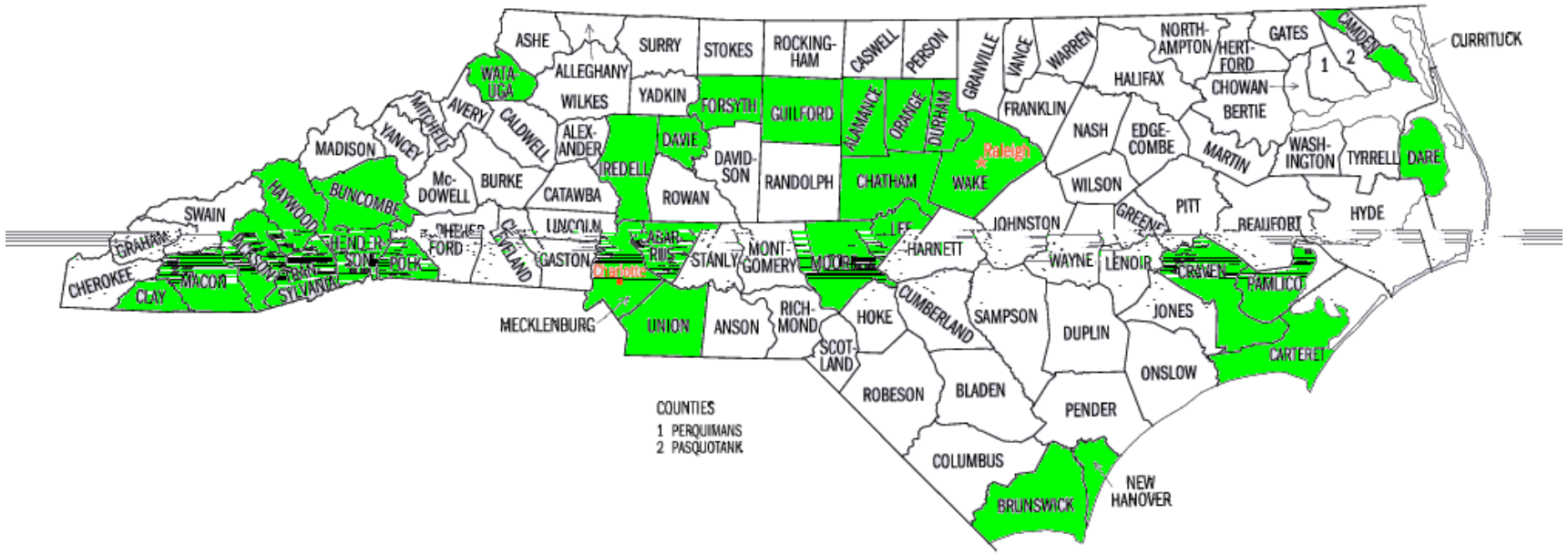

Educational Needs Index, SGA Fall 2003

Oklahoma

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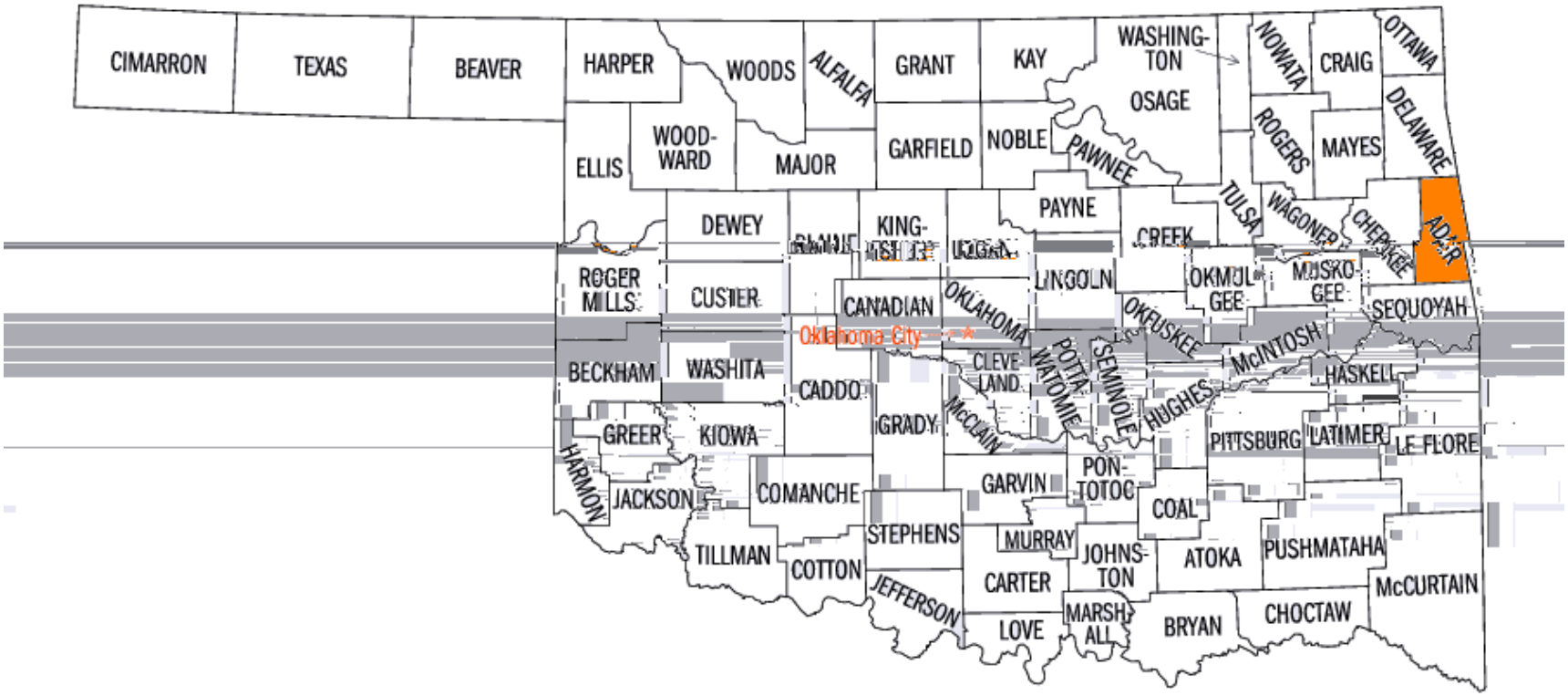

Educational Needs Index, SGA Fall 2003

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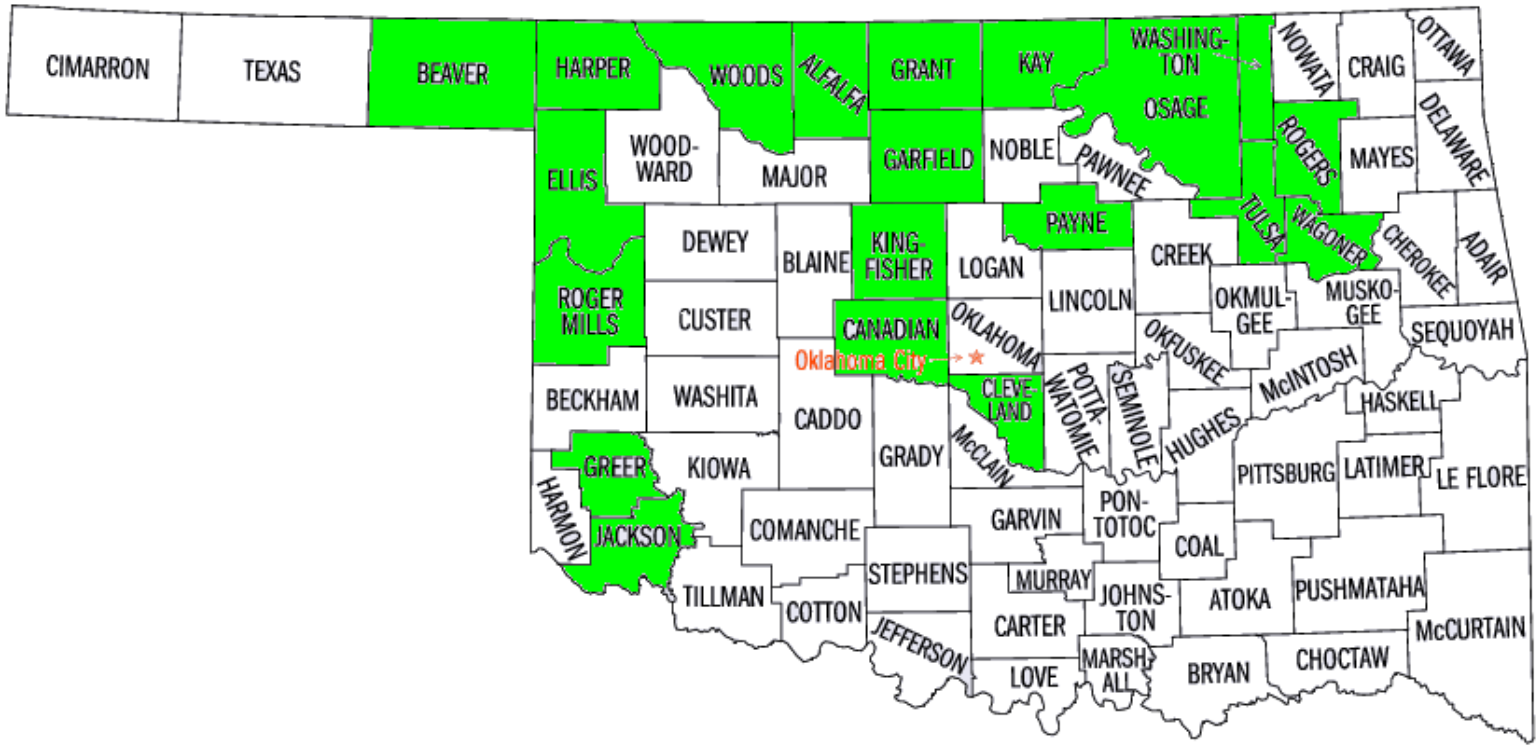

Educational Needs Index, SGA Fall 2003

South Carolina

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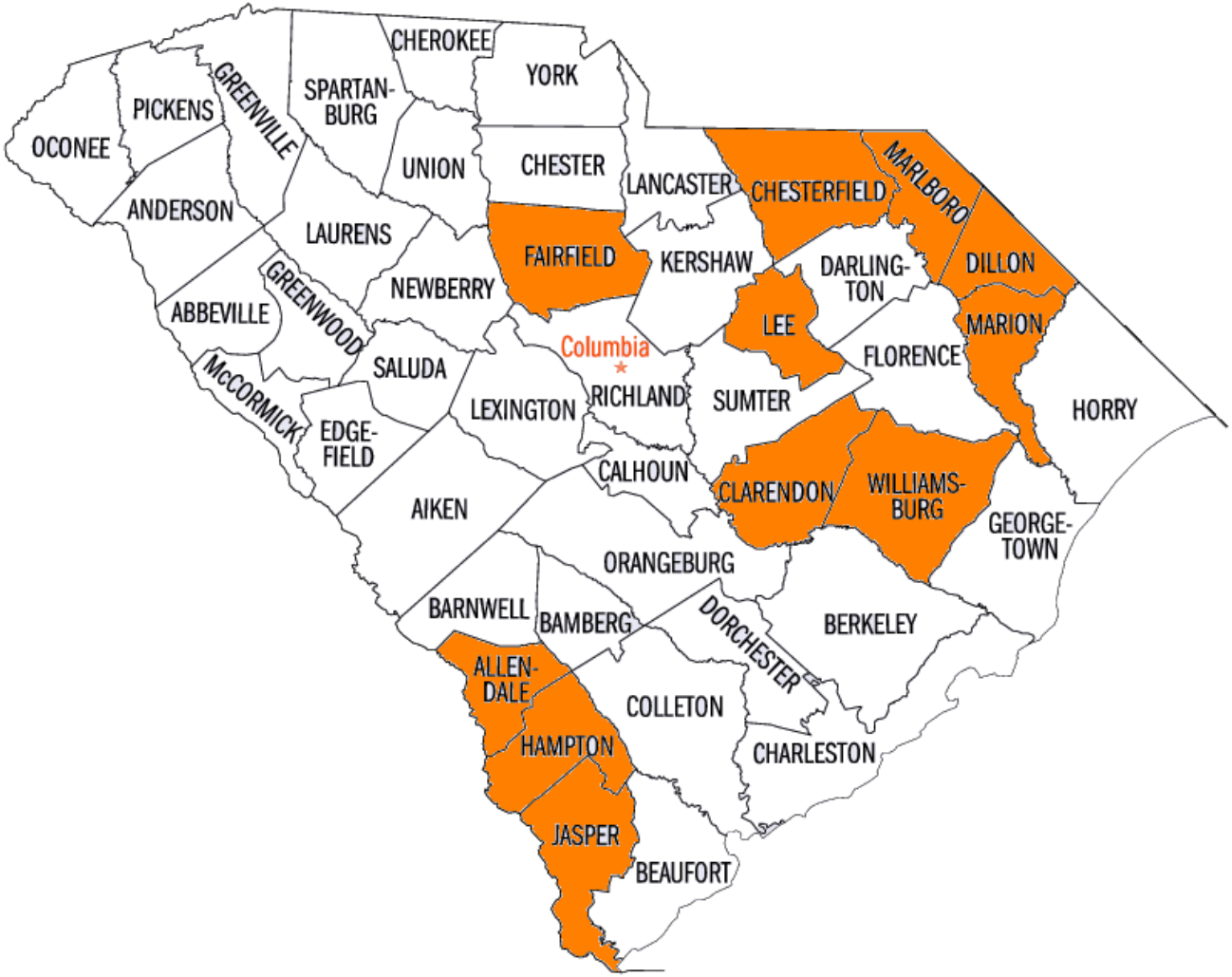

Educational Needs Index, SGA Fall 2003

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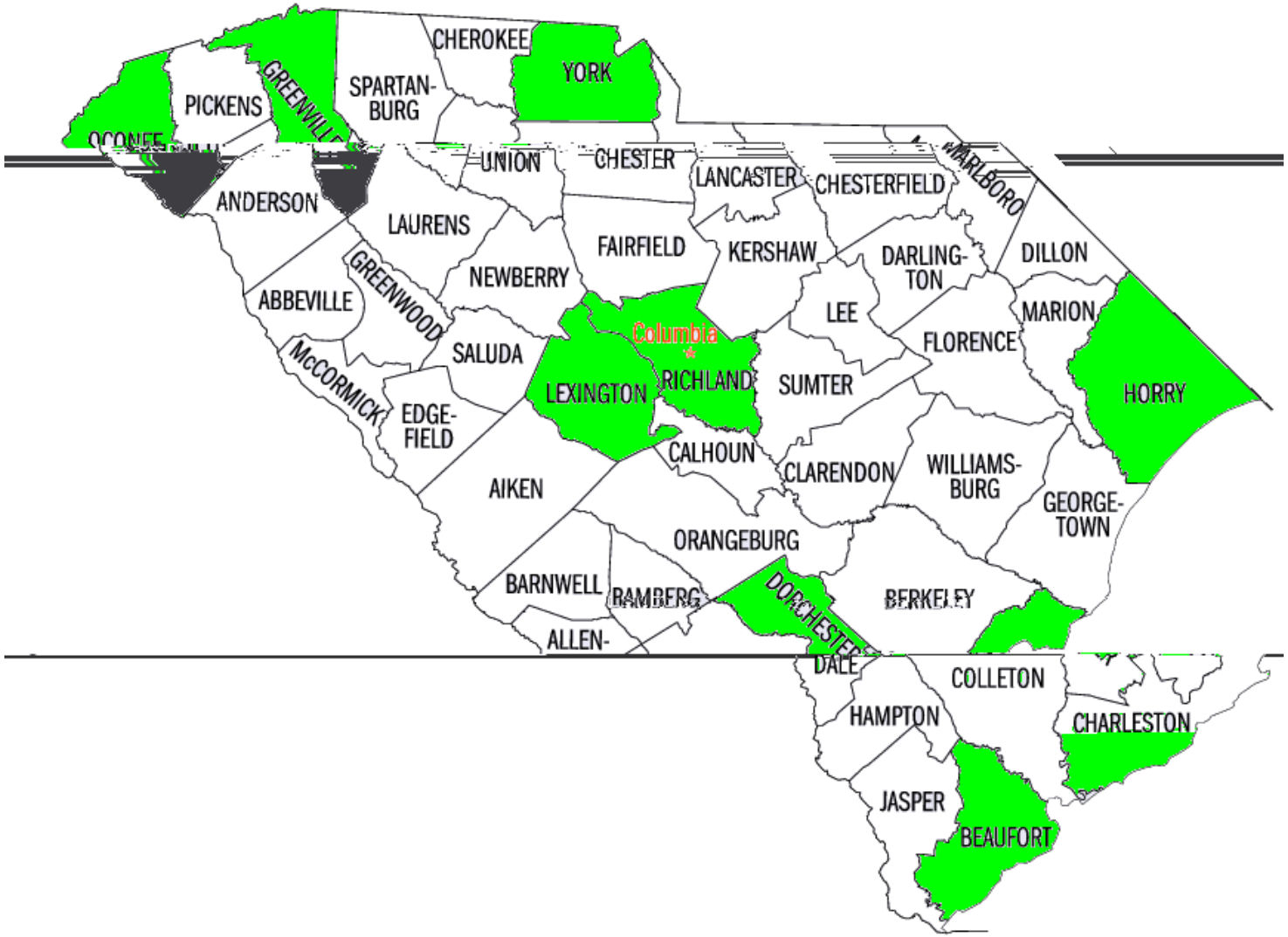

Educational Needs Index, SGA Fall 2003

Tennessee

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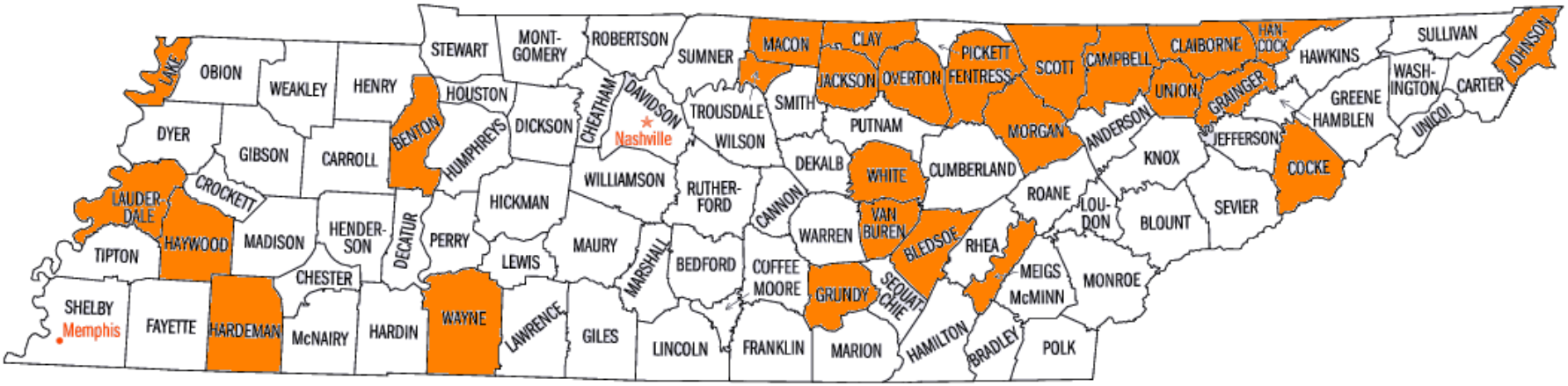

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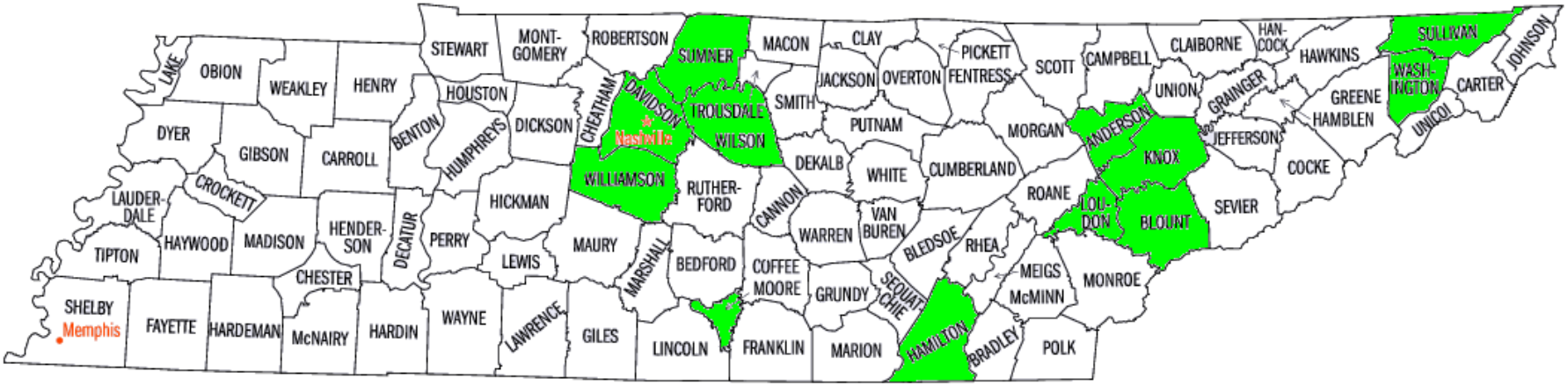

Texas

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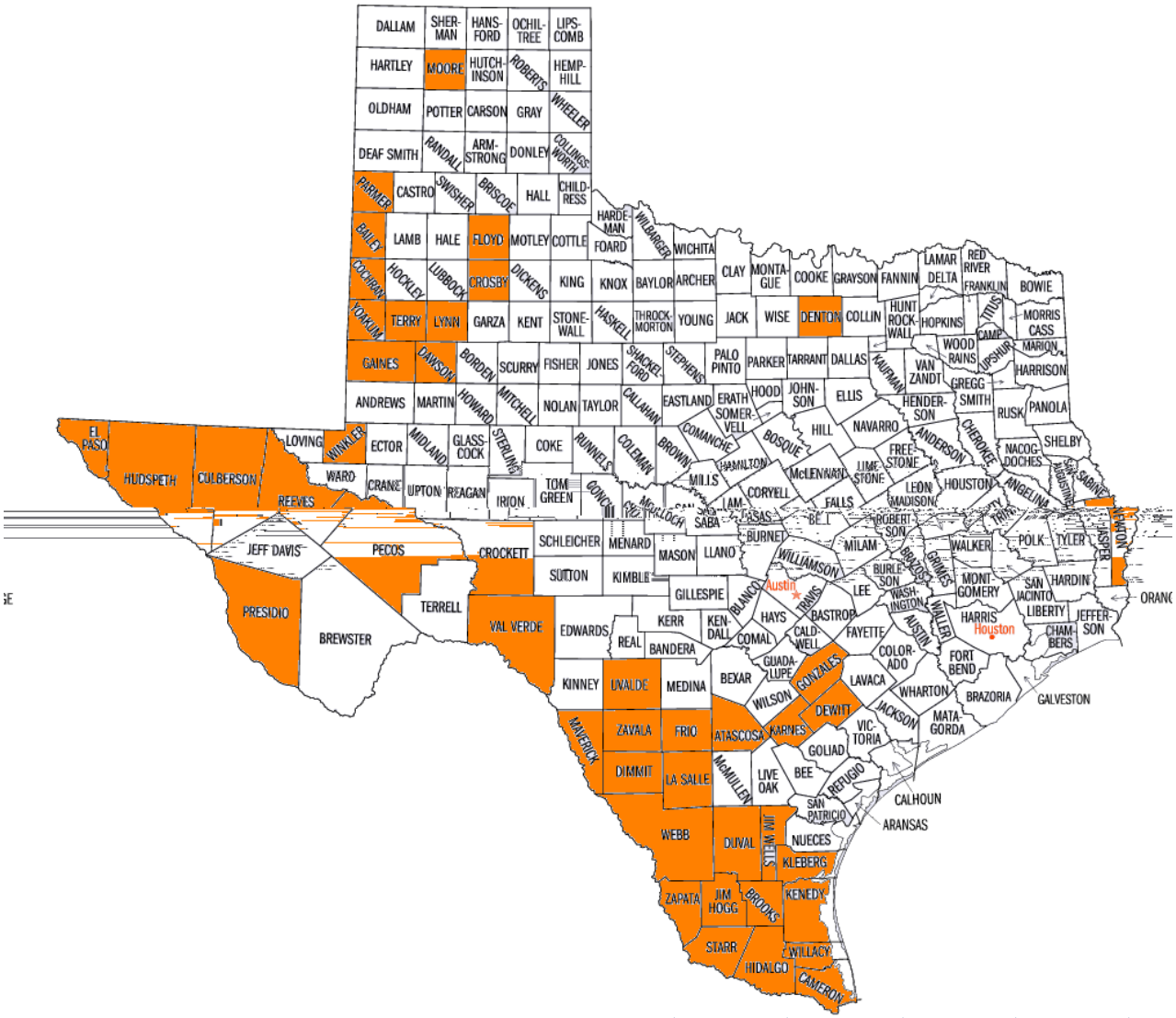

Educational Needs Index, SGA Fall 2003

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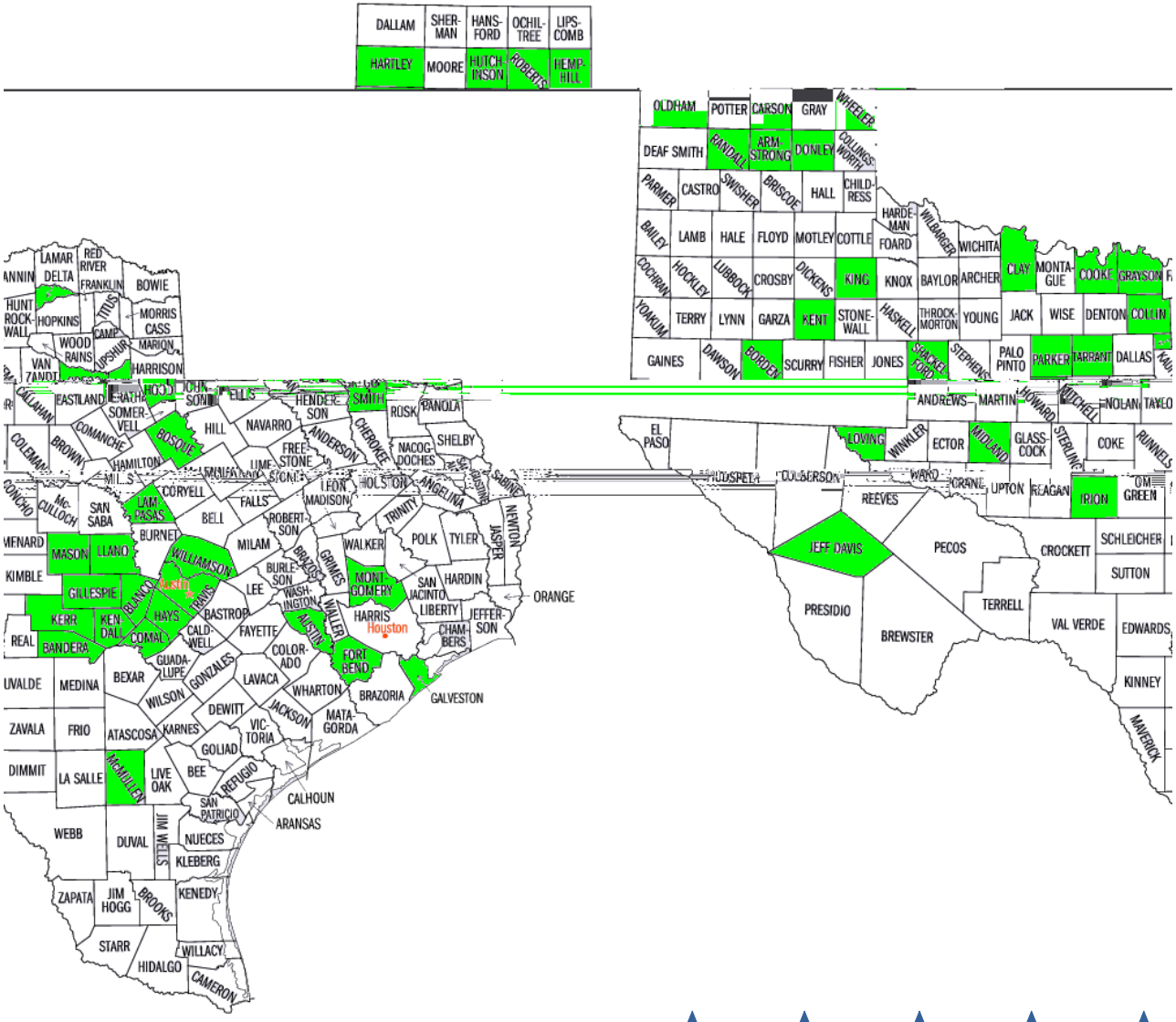

Educational Needs Index, SGA Fall 2003

Virginia

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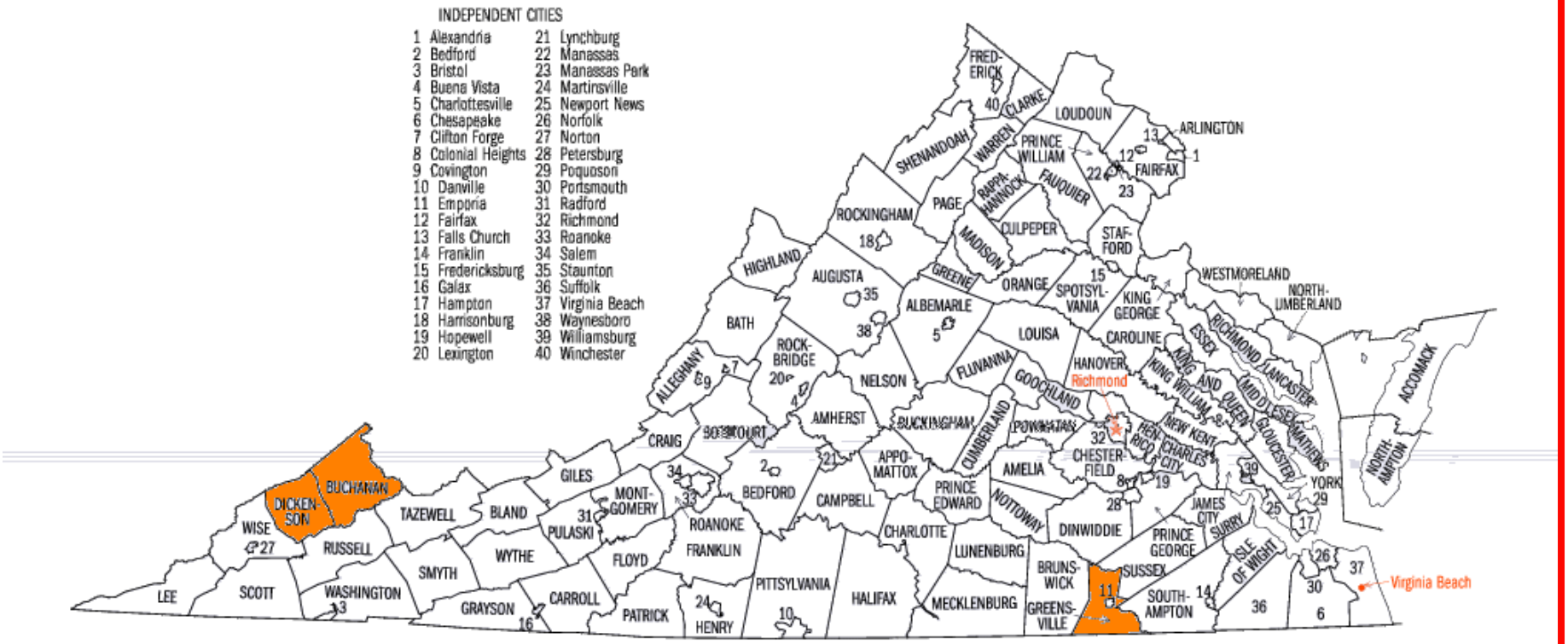

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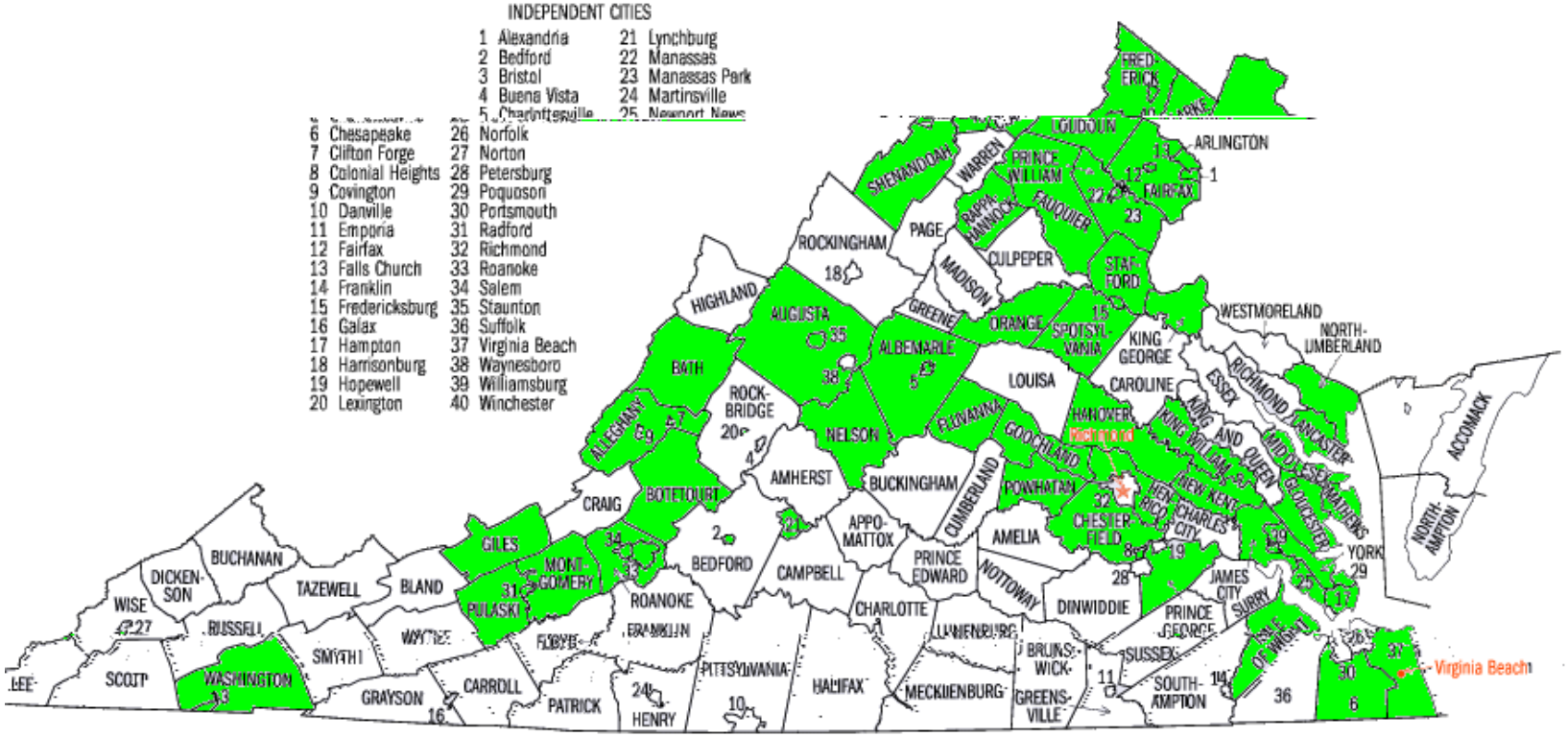

Educational Needs Index, SGA Fall 2003

West Virginia

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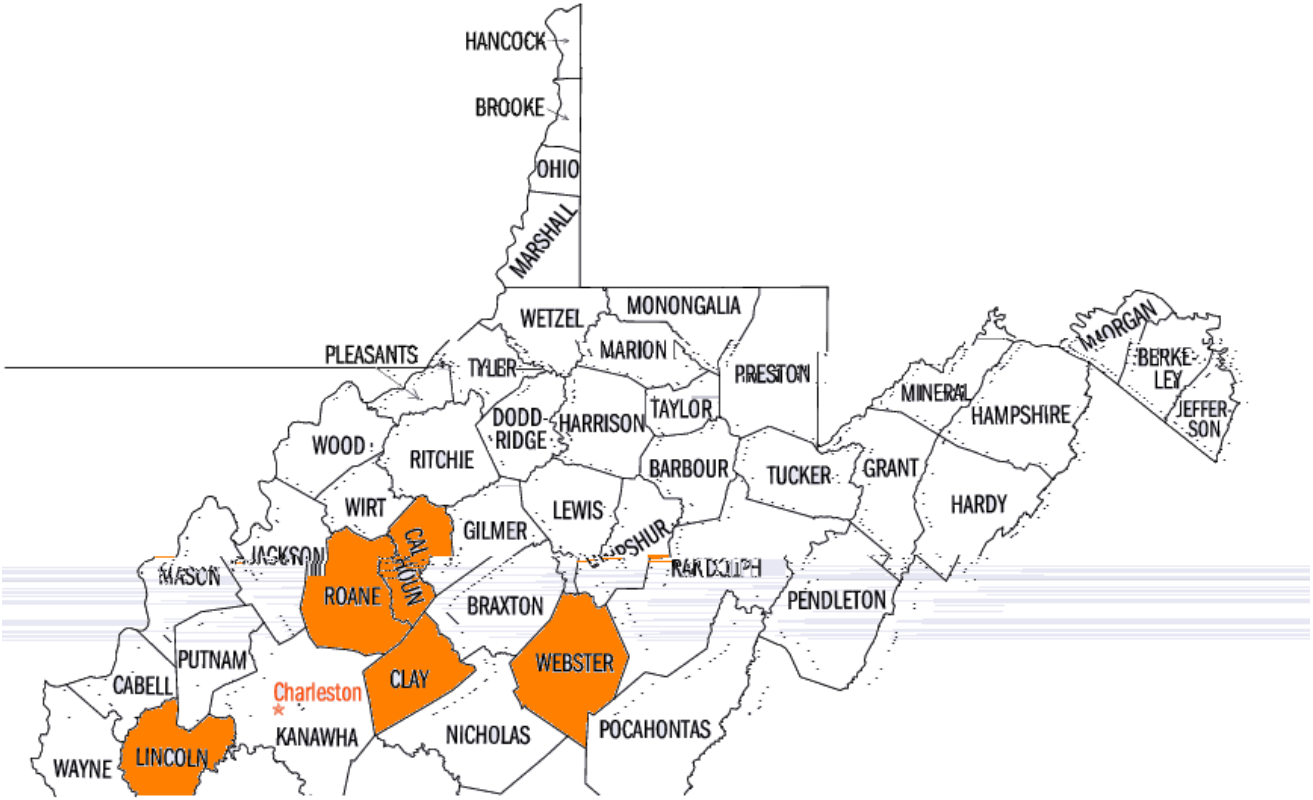

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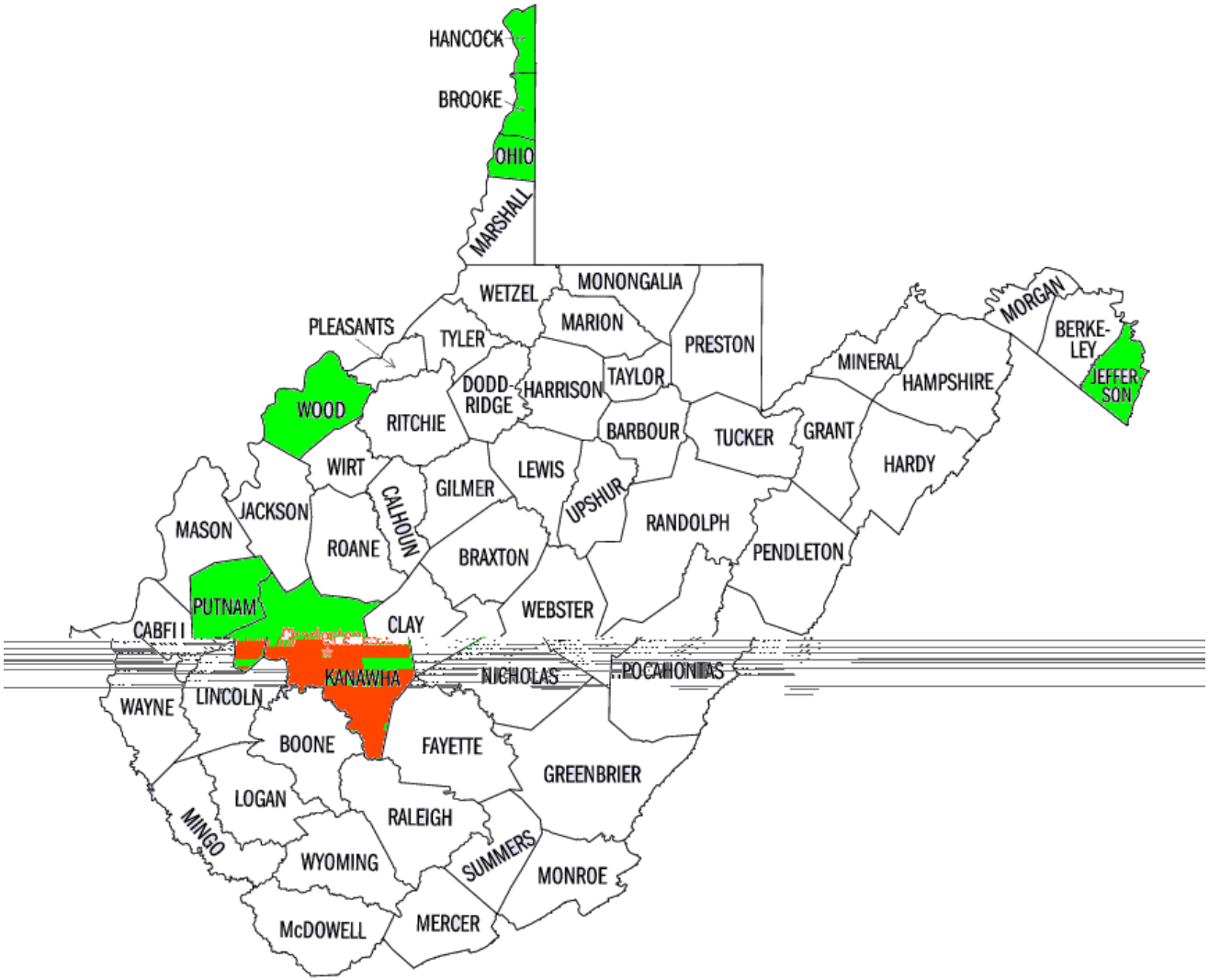
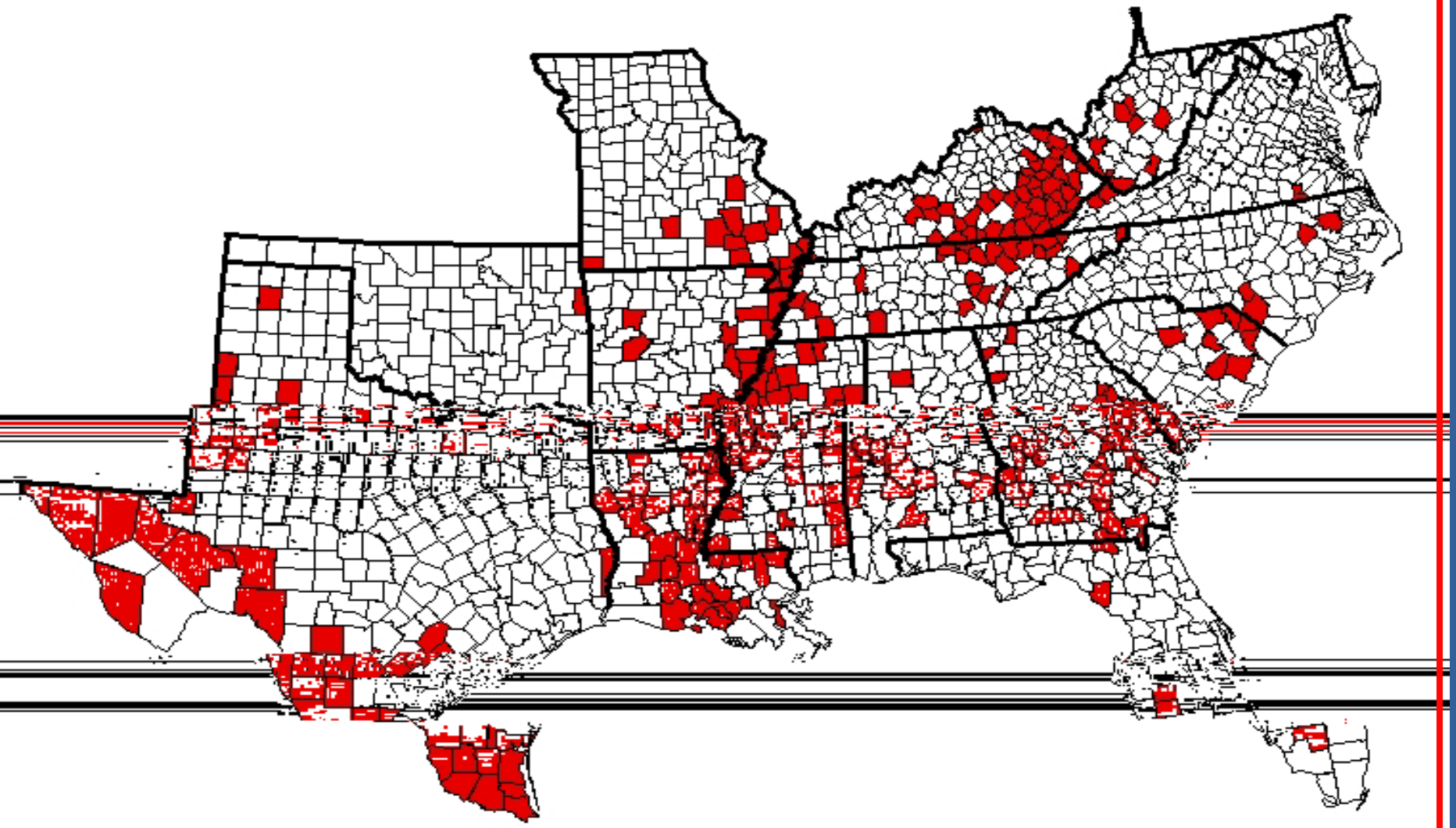


Educational Needs Index, SGA Fall 2003

Overall Analysis for the SGA States

ENI – Most Critical 300 in South



Educational Needs Index, SGA Fall 2003

Overall Analysis for the SGA States

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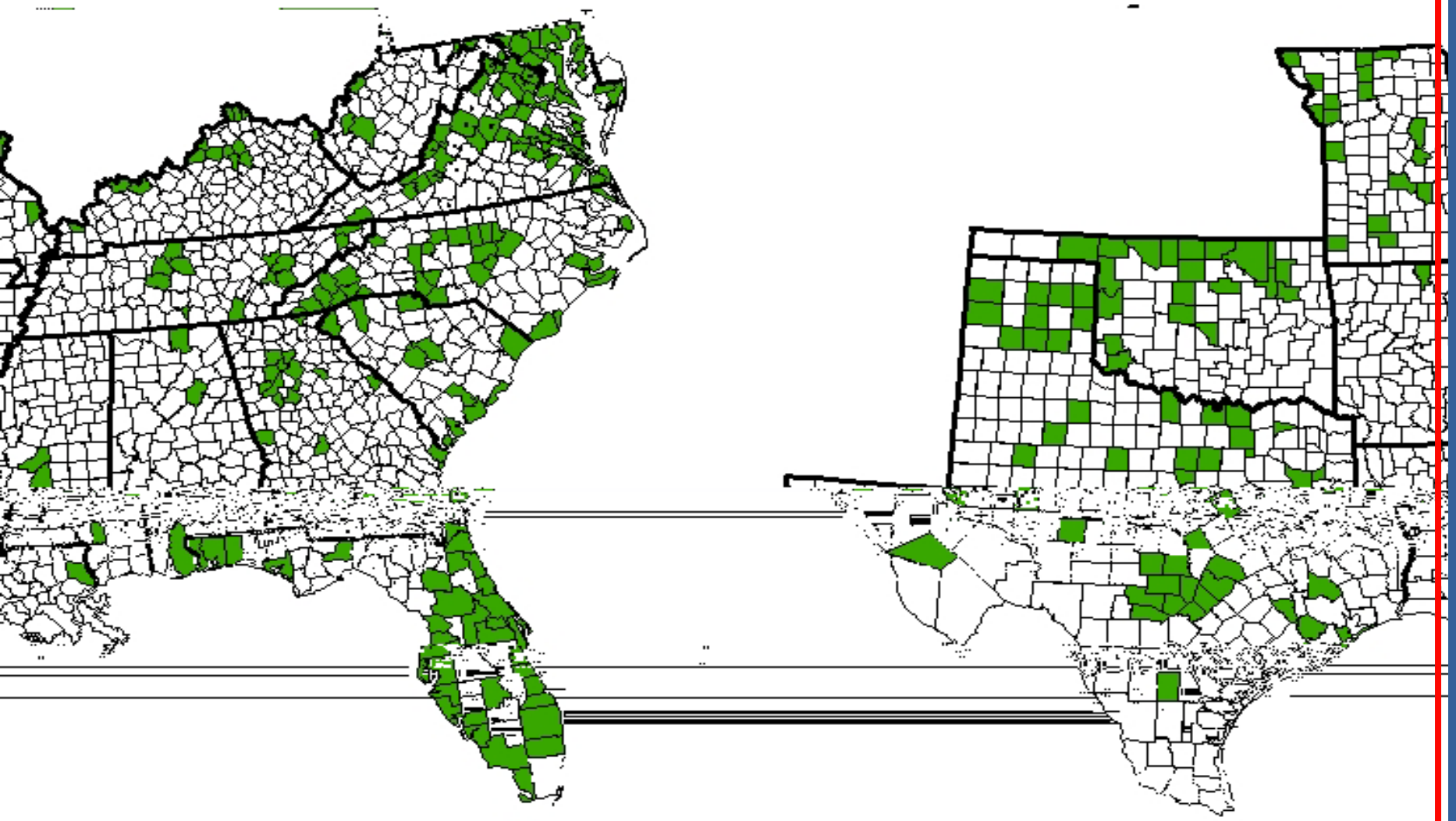


Educational Needs Index, SGA Fall 2003

Educational Needs Index

Analysis of 1,538 Counties in the South - Most/Least Critical (Quintiles)					
	# of Counties in State	# in 300 Most Critical	% in 300 Most Critical	# in 300 Least Critical	% in 300 Least Critical
Alabama	67	13	19%	3	4%
Arkansas	75	14	19%	1	1%
Delaware	3	0	0%	0	0%
Florida	67	5	7%	34	**51%**
Georgia	159	44	**28%**	17	11%
Kentucky	120	44	**37%**	14	12%
Louisiana	64	35	**55%**	1	2%
Maryland	24	0	0%	18	**75%**
Missouri	115	13	11%	20	17%
Mississippi	82	35	**43%**	3	4%
North Carolina	100	4	4%	30	**30%**
Oklahoma	77	1	1%	20	**26%**
South Carolina	46	11	**24%**	9	20%
Tennessee	95	26	**27%**	12	13%
Texas	254	44	17%	47	19%
Virginia	135	3	2%	64	**47%**
West Virginia	55	8	15%	7	13%

Educational Needs Index

Analysis by Individual County

Comparison of Kanawha, WV to Counties of Similar Size in the South

Individual County with Peers

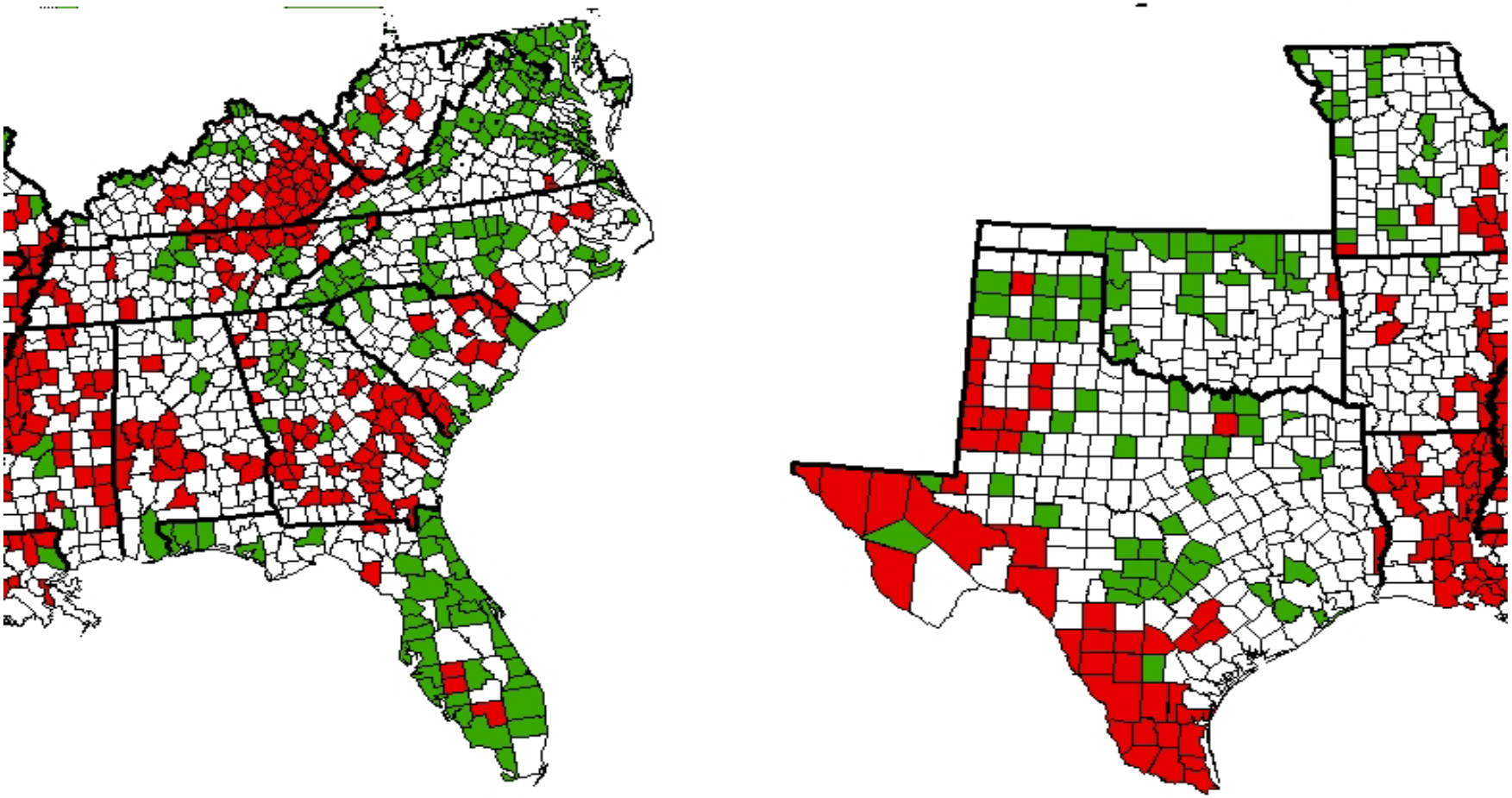
ENI Analysis of ONLY the Counties with Population Between 175,000 and 225,000								
ST	County	Census 2000 Pop.	Educ Factors	Econ Factors	Growth Factors	Market Factors	Pop. Adjust.	ENI SCORE
TX	Webb	193,117	1.914	2.289	2.795	0.590	-1.213	1.895
LA	Calcasieu	183,577	0.851	0.688	-0.289	0.053	0.244	0.472
LA	Lafayette	190,503	0.541	0.381	0.162	-0.242	0.426	0.341
NC	Gaston	190,365	0.707	0.361	-0.502	0.820	-0.603	0.325
VA	Richmond City	197,790	0.723	0.891	-1.154	0.602	-0.373	0.323
GA	Richmond	199,775	0.256	1.099	-0.538	0.514	-0.542	0.294
TN	Rutherford	182,023	0.261	-0.414	1.066	0.647	0.019	0.280
TX	McLennan	213,517	0.077	0.719	-0.103	0.204	-1.234	0.149
AL	Montgomery	223,510	0.085	0.448	-0.342	0.213	0.811	0.139
GA	Muscogee	186,291	0.178	0.561	-0.595	0.590	-0.623	0.120
WV	**Kanawha**	**200,073**	**0.387**	**0.254**	**-1.151**	**-0.766**	**3.410**	**0.082**
MS	Harrison	189,601	-0.077	0.347	-0.165	-0.217	1.514	0.077
MO	Jefferson	198,099	0.316	-0.307	0.137	-0.086	0.097	0.073
FL	St. Lucie	192,695	0.102	0.561	-0.030	-0.965	-1.179	0.019
VA	Newport News City	180,150	-0.272	0.282	-0.113	0.717	-0.385	-0.008
SC	Horry	196,629	-0.048	0.064	-0.131	-0.516	0.431	-0.060
LA	St. Tammany	191,268	0.015	-0.610	0.556	-0.676	0.309	-0.087
VA	Chesapeake City	199,184	-0.270	-0.804	0.884	0.047	-0.269	-0.141
FL	Lake	210,528	0.144	-0.219	0.074	-1.257	-1.180	-0.167
NC	Durham	223,314	-0.556	-0.307	0.113	0.769	-0.306	-0.215
OK	Cleveland	208,016	-0.409	-0.342	-0.266	-0.167	1.383	-0.250
SC	Lexington	216,014	-0.534	-0.605	0.269	-0.207	0.906	-0.286
NC	Buncombe	206,330	-0.369	-0.080	-0.417	-0.110	-0.594	-0.292
MO	Clay	184,006	-0.314	-0.924	-0.175	-0.225	-0.079	-0.418
FL	Alachua	217,955	-1.609	0.747	-0.039	0.027	-0.947	-0.509
MD	Frederick	195,277	-0.565	-1.547	0.659	-0.459	0.122	-0.521
MD	Harford	218,590	-0.629	-1.276	0.204	-0.387	0.303	-0.553
VA	Arlington	189,453	-0.906	-2.259	-0.909	0.486	-0.449	-1.083

Individual County with Peers

Kanawha County's Position Among 28

Kanawha County's Position Among 28 Counties w/Populations Between 175,000 and 225,000					
Educational Factors	Economic Factors	Growth Factors	Market Factors	Population Adjustment	ENI Score
6th	**14th**	**27th**	**26th**	**1st**	**11th**

The ENI - Conclusions & Recommendations



Conclusions

- Policymakers must remain diligent in their commitment to creating policies that promote the facilitation of expanding the human capital quotient of all citizens.
- Southern states must implement policies to rectify the human capital deficit ...
  - These include keeping more college graduates in state, identifying gaps in the P-16 pipeline, increasing adult literacy and lifelong learning, and attracting college graduates into the region.
- States must continually invest in their educational infrastructure. States should re-examine their funding for higher education, remaining ever mindful that higher education is the engine that drives the Knowledge Economy.

Recommendations

- Revise and reform higher education to ensure that the goals of the public agenda are achieved.
- Create regional clusters of higher education institutions, business, and industry that meet the regional needs of local communities ...
  - Increase research related to key industrial clusters identified in the public agenda.
  - Increase the transfer of technologies to companies in the region.
  - Increase overall educational attainment levels of the region.
- Improve P-16 outreach to ensure that all students are prepared for post-secondary education.

The Importance of Higher Education

- The region is in a national race to develop a knowledge-based society that facilitates competition in the information marketplace. The academic imperative to maximize the achievement of all students must come to the forefront.
- Major gains are unlikely unless higher education works cooperatively with the K-12 sector to ensure that students are prepared for college, educational costs remain affordable, and a greater percentage of students to enter and graduate from college on time.
- By bringing these pieces of the puzzle together, the region will eventually be able to realize a higher degree of performance in a variety of educational, economic, and social categories.

For more information on the Educational Needs Index contact:

Dr. Houston Davis, Austin Peay State University

davish@apsu.edu or 931/221-7992

Dr. Brian Noland, Tennessee Higher Education Commission

brian.noland@state.tn.us or 615/532-3862

Mr. Patrick Kelly, NCHEMS

patrick@nchems.org or 303/497-0307